

# Exhibit E

Defendants.

1. My background consists of academic and government work focusing on financial institutions and markets, including their regulation and supervision. I earned a Ph.D. in economics at The Ohio State University and am currently the Lowder Eminent Scholar in Finance at Auburn University, a Senior Finance Fellow at the Milken Institute, and a Fellow at the Wharton Financial Institutions Center. I have served on the faculty at Auburn University since 1989 and I previously served on the faculty at George Washington University for 15 years. My teaching and research have focused on financial institutions and markets throughout my 40-year academic career. In my scholarly research and government service, I have studied the performance of hundreds of financial institutions, including the causes of distress for many of those that failed.

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2. In addition, I have served as Director of the Office of Policy and Economic Research of the Federal Home Loan Bank Board and Chief Economist of the Office of Thrift Supervision. I have also held positions as Visiting Scholar at the Congressional Budget Office, the Federal Reserve Bank of Atlanta, the Office of the Comptroller of the Currency, and the World Bank. I served, moreover, as a member of the Advisory Council of George Washington University's Financial Services Research Program. My experience and my knowledge of the performance and regulation of financial institutions and markets have resulted in my being invited to testify before United States Congressional Committees on several occasions.

3. I have published approximately 300 professional and scholarly articles, and coedited or coauthored several books, including: *The Great Savings and Loan Debacle* (American Enterprise Institute Press, 1991), *The Future of American Banking* (Columbia University Seminar Series, M.E. Sharpe, Inc., 1992), *The Reform of Federal Deposit Insurance* (Harper Business, 1992), *Restructuring Regulation and Financial Institutions* (Milken Institute Press, 2000), *The Savings and Loan Crisis: Lessons from a Regulatory Failure* (Kluwer Academic Publishers, 2004), *Rethinking Bank Regulation: Till Angels Govern* (Cambridge University Press, 2006), *Global Banking Regulation and Supervision: What Are the Issues and What Are the Practices?* (Nova Science Publishers, 2009), *The Rise and Fall of the U.S. Mortgage and Credit Markets: A Comprehensive Analysis of the Meltdown* (John Wiley & Sons, 2009), *Research Handbook on International Banking and Governance* (Edward Elgar Publishing, 2012), *Guardians of Finance: Making Regulators Work for Us* (MIT Press, 2012), and *Fixing the Housing Market: Financial Innovations for the Future* (Prentice Hall, 2012). My curriculum vita is attached to this report as Exhibit A. A list of cases that I have testified in the last four years is attached to this report as Exhibit B.

## II. BACKGROUND, ASSIGNMENT AND SUMMARY OF CONCLUSIONS

4. I understand that between November 30, 2005 and April 30, 2007, The Federal National Mortgage Association (“Fannie Mae”) and The Federal Home Loan Mortgage Corporation (“Freddie Mac”) (collectively the “Government Sponsored Enterprises” or the “GSEs”) purchased over \$2 billion in private-label residential mortgage-backed securities (the “At-Issue Certificates”) issued in connection with seven Nomura-sponsored securitizations (the “At-Issue Securitizations”).<sup>1</sup>

5. The Federal Housing Finance Agency (“FHFA”), as conservator of Fannie Mae and Freddie Mac, alleges that Defendants sold the At-Issue Certificates pursuant to registration statements, including prospectuses and prospectus supplements, that contained materially false statements and omissions.<sup>2</sup> In particular, FHFA alleges that Defendants falsely represented that the underlying mortgage loans complied with stated underwriting guidelines that were intended to assess the creditworthiness of the borrowers, the ability of the borrowers to repay their mortgage loans, and the adequacy of the mortgaged properties as security for these loans.<sup>3</sup> FHFA further alleges that the prospectus supplements materially understated the loan-to-value (“LTV”) ratios of the loans in the supporting loan groups for the At-Issue Certificates (the “At-Issue Loans”), and materially overstated the percentage of owner-occupied properties in these supporting loan groups.<sup>4</sup>

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1. Amended Complaint (“FAC”), ¶ 2. FAC ¶ 2 identifies the At-Issue Securitizations, and FAC ¶ 35 (Table 1) identifies the date of issuance, tranche purchased, principal amount issued per tranche, sponsor/seller, depositor, lead underwriter, and supporting loan group(s) for each of the At-Issue Securitizations.
  2. FAC, ¶ 1. Defendants are Nomura Holding America Inc. (“Nomura Holding”), Nomura Asset Acceptance Corporation (“NAA”), Nomura Home Equity Loan, Inc. (“NHEL”), Nomura Credit & Capital, Inc. (“Nomura Credit”), Nomura Securities International, Inc. (“Nomura Securities”), (collectively, “Nomura” or the “Nomura Defendants”), RBS Securities Inc. (f/k/a Greenwich Capital Markets, Inc.) (“RBS Securities”), and David Findlay, John McCarthy, John P. Graham, Nathan Gorin, and N. Dante Larocca (the “Individual Defendants,” and together with Nomura and RBS Securities, the “Defendants”).  
Id.
  3. Id., ¶¶ 1, 5-6, 76-85 & 113-29.
  4. Id., ¶¶ 6-7, 100-112. LTV refers to the original loan-to-value ratio for securitized first lien

6. FHFA contends that the alleged misrepresentations and omissions were material to reasonable investors.<sup>5</sup> FHFA also contends that, but for the misrepresentations and omissions, the GSEs would not have purchased or acquired the At-Issue Certificates.<sup>6</sup> I understand that FHFA has asserted claims against the Defendants for, among other things, violations of Section 11 and Section 12(a)(2) of the Securities Act of 1933, and that FHFA seeks damages for each GSE's monetary losses, including any diminution in value of the At-Issue Certificates, and lost principal and interest payments thereon.<sup>7</sup>

7. Defendants' expert, Kerry D. Vandell, Ph.D., was asked to, among other things, "[d]escribe the factors that contributed to the housing and mortgage market boom of 2000 to 2006, as well as its subsequent decline," and to "[a]ssess the impact, if any, of the alleged misstatements in the offering documents on the performance of the loans backing the At-Issue Certificates."<sup>8</sup> Professor Vandell purports to quantify the portion of the GSEs' losses that were caused by "observable loan and borrower characteristics and changes in economic conditions" such as house prices, unemployment and reductions in market liquidity that he asserts are "unrelated to the origination of the At-Issue Loans or any alleged misrepresentations about their characteristics."<sup>9</sup>

8. I have been asked by counsel for FHFA to review the Vandell Report and analyze whether that report actually establishes that the declines in home prices, increases in unemployment rates, and reductions in market liquidity that occurred in the period after the issuance of the At-Issue Certificates were wholly unrelated to underwriting defects, misrepresentations and omissions of the types FHFA alleges (the "Alleged Underwriting

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mortgages and the combined-loan-to-value ratio ("CLTV") of securitized junior liens. Id., note 8. The CLTV for a securitized junior lien is calculated by dividing the combined value of the junior lien and the senior lien(s) by the value of the mortgaged property. Id.

5. Id., ¶¶ 1, 5, 6, 76-7, 85, 88-89, 95, 99, 132, 143, 162, 181, 195, 213, 227, & 245.

6. Id., ¶¶ 135, 145, 167, 182, 200, 214, 232, & 246.

7. Id., ¶¶ 137-38, 151-52, & 248; see also ¶¶ 139-150 & 153-170.

8. See Expert Report of Kerry D. Vandell, Ph.D., July 9, 2014 ("Vandell Report"), ¶ 8.

9. Id., ¶¶ 14, 172, 174, 194, 202-4, 211, 212, 221.

Defects”).<sup>10</sup> I have concluded that the Vandell Report does not establish that these changes in economic conditions were unrelated to the Alleged Underwriting Defects for several reasons:

- First, Professor Vandell’s analysis implies that the Alleged Underwriting Defects contributed to the housing price bubble by increasing the supply of credit to unqualified borrowers. As Professor Vandell recognizes, increases in the supply of credit associated with securitization facilitated the unprecedented increases in mortgage lending, the homeownership rate, and housing prices that occurred during the housing boom.
- Second, the Vandell Report implies that the Alleged Underwriting Defects contributed to the unprecedented decline in housing prices that occurred when the housing bubble burst not only by contributing to the unsustainable housing price bubble, but also by reducing the quality of loans originated during the housing boom, which exacerbated the resulting housing crisis.
- Finally, as the Vandell Report recognizes, the bursting of the housing price bubble triggered a financial crisis and an ensuing severe recession, which, in turn, further exacerbated the housing crisis.

In other words, the Vandell Report (as well as other economic evidence discussed below) establishes that the decline in housing prices, increase in unemployment, and reduction in liquidity that occurred after the issuance of the At-Issue Certificates were related to the Alleged Underwriting Defects. I elaborate upon and provide the bases for my opinions in the remainder of this report. Section III discusses how the Alleged Underwriting Defects contributed to the housing price bubble; Section IV discusses how the Alleged Underwriting Defects contributed to the housing crisis that ensued when the housing bubble burst; and Section V explains how that housing crisis contributed to the financial crisis and ensuing severe recession, which, in turn, exacerbated the housing crisis. A list of the materials relied upon in connection with the preparation of this report is attached as Exhibit C.

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10. I am being compensated for the time I spend on this matter at \$550 per hour. In connection with this assignment, I have been assisted by members of the professional staff of Compass Lexecon, an economics consulting firm, working under my supervision.

### III. THE ALLEGED UNDERWRITING DEFECTS CONTRIBUTED TO THE INFLATION OF THE HOUSING PRICE BUBBLE

9. While the Vandell Report recognizes that increases in the supply of credit associated with securitization facilitated the unprecedented increases in mortgage lending, home ownership, and housing prices that occurred during the housing boom, it ignores the role of the Alleged Underwriting Defects. As is demonstrated below, the Alleged Underwriting Defects expanded the supply of credit and, therefore, contributed to the housing price bubble.

10. Scholars now generally agree that a housing price bubble formed in the United States during the period 1995 to 2006.<sup>11</sup> This bubble was a period of unusual house price appreciation that was sustained, not by fundamental values, but rather by market participants' beliefs that prices would continue to rise in the near future.<sup>12</sup> As Baily, Litan and Johnson of the

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11. The precise timing of the start of the bubble is less clear. Case and Shiller found evidence of a house price bubble in 2003 (Karl E. Case & Robert J. Shiller, "Is There a Bubble in the Housing Market?," 2 Brookings Papers on Economic Activity (2003), 299-362 at 341), while the Federal Reserve's Dokko et al. date the bubble as starting after 2002 (Jane Dokko, Brian Doyle, Michael T. Kiley, Jinill Kim, Shane Sherlund, Jae Sim, & Skander Van den Heuvel, "Monetary Policy and the Housing Bubble," Finance and Economics Discussion Series, Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board, (2009), at 1 & 23). Baily, Litan & Johnson of the Brookings Institution date the bubble from the mid-1990s (Martin Neil Baily, Robert E. Litan, & Matthew S. Johnson, "The Origins of the Financial Crisis," 3 Fixing Finance Series, Brookings Institution (November 2008), at 7). In his academic work, Professor Vandell appears to date the start of the bubble to 2003. (Major Coleman IV, Michael LaCour-Little, & Kerry D. Vandell, "Subprime lending and the housing bubble: Tail wags dog?," 17 Journal of Housing Economics (2008), 272-290 at 272 ("[W]e do find strong evidence that a credit regime shift took place in late 2003, as the GSE's [sic] were displaced in the market by private issuers of new mortgage products ... and the price-momentum conditions characteristic of a 'bubble' were created.")).

12. See, e.g., Joseph E. Stiglitz, "Symposium on Bubbles," 4 Journal of Economic Perspectives (Spring 1990), 13-18, at 13 ("[I]f the reason the price is high today is only because investors believe that the selling price will be high tomorrow—when 'fundamental' factors do not seem to justify such a price—then a bubble exists."); see also Alan Greenspan, "Question: Is there a New Economy?," Remarks by Chairman Alan Greenspan at the Haas Annual Business Faculty Research Dialogue, University of California, Berkeley, California, September 4, 1988 ("[M]arket bubbles -- that is, asset values inflated more on the expectation that others will pay higher prices than on a knowledgeable judgment of true value."); Jan K. Brueckner, Paul S. Calem, & Leonard I. Nakamura, "Subprime mortgages and the housing

Brookings Institution state: “[the] bubble formed in the housing markets as home prices across the country increased each year from the mid 1990s to 2006, moving out of line with fundamentals like household income.”<sup>13</sup> Vandell Report, Exhibit 2 illustrates the rapid and, indeed, unprecedented increase in home prices during this period.<sup>14</sup> This price appreciation was even more remarkable in certain sections of the country. The so-called “sand states” of Arizona, California, Florida, and Nevada, for example, exhibited “dramatically larger spikes and subsequent declines in housing prices than did the United States as a whole.”<sup>15</sup>

11. As Professor Vandell recognizes, the housing price bubble was “[t]riggered in part by the increase in demand for homes” that was “accompanied by rapid growth of the mortgage lending market.”<sup>16</sup> Vandell Report Exhibit 4 shows that aggregate mortgage debt in the United States more than doubled between 2000 and the first quarter of 2008 from approximately \$4.5 trillion to \$10.7 trillion. Vandell Report Exhibit 5 shows that mortgage debt grew from approximately 50 percent of gross domestic product (“GDP”) in 2000 to 77.6 percent of GDP by 2007. Vandell Report Exhibit 6 shows that the value of residential mortgage

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bubble,” 71 Journal of Urban Economics (2012), 230-243, at 230 (“Expectations of future price growth can therefore generate in [sic] increase in current prices by boosting the supply of credit, feeding a housing ‘bubble’ ... a bubble is defined as a rapid run-up in prices not linked to fundamentals.”).

13. Baily, Litan & Johnson (2008), at 7.

14. See also “The Mortgage Crisis,” Financial Crisis Inquiry Commission, Preliminary Staff Report, April 7, 2010, at 13 (“The size of the increase from 1998 to the peak in 2006 [was] substantially greater than any previous increase.”).

15. Id., at 15. See also Vandell Report, Exhibit 3 (providing home price indices for the larger cities in these states).

16. Vandell Report, ¶¶ 45-6. See also Adam J. Levitin, & Susan M. Wachter, “Explaining the Housing Bubble,” 100 The Georgetown Law Journal (2012), 1177-1258, at 1182 (“The oversupply of mortgage credit enabled borrowers to bid up housing prices, thereby fueling a bubble as higher housing prices enabled a greater supply of credit for refinanced mortgages by increasing the apparent value of the collateral.”); Statement of John C. Dugan, Comptroller of the Currency, before the Financial Crisis Inquiry Commission, April 8, 2010, at 3. (“Cheap credit and easy underwriting helped qualify more consumers for mortgages, which increased demand for houses, which increased house prices.”).



loan originations, which was approximately \$1.0 trillion in 2000, ranged from approximately \$2.2 trillion to approximately \$3.9 trillion per year during the period from 2001 to 2007.

Vandell Report Exhibit 16 shows that the growth in subprime mortgage loan originations was even more dramatic, as such originations grew from approximately \$100 billion in 2000 to \$625 billion in 2005. As a result, subprime loans as a percentage of all new mortgage loans grew from 9.5 percent in 2000 to 20 percent in 2005, as Vandell Report Exhibit 17 shows.<sup>17</sup>

12. Professor Vandell also recognizes that the growth in mortgage originations generally and subprime originations in particular was facilitated by growth in the securitization of residential mortgage loans.<sup>18</sup> The value of loans securitized quadrupled between 2000 and 2003, growing from approximately \$550 billion in 2000 to over \$2.7 trillion in 2003, and the annual value of loans securitized ranged from approximately \$1.8 trillion to \$2.2 trillion from 2004 to 2007.<sup>19</sup> Vandell Report, Exhibit 9 shows that during the period from 2000 to 2006, the percentage of mortgages that were securitized increased and the share of total securitizations attributable to non-agency (*i.e.*, private-label) mortgages increased, while the share of securitizations attributable to agency mortgages decreased. The increase in securitization rates was even greater for subprime mortgages: in 2001, approximately 50 percent of subprime mortgage loans were securitized, but in 2005 and 2006, more than 80 percent of subprime mortgage loans were securitized.<sup>20</sup> Private-label residential mortgage-backed securitization increased from less than \$150 billion in 2000 to more than \$1.1 trillion in 2005 and 2006, and

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17. Vandell Report, Exhibit 17 also shows that Alt-A lending and home equity loans grew substantially from 2000 to 2006.

18. Vandell Report, ¶¶ 99-100. See also *id.*, ¶¶ 47-8.

19. *Id.*, Exhibit 8.

20. Gary B. Gorton, Slapped by the Invisible Hand, The Panic of 2007, (Oxford University Press, 2010), at 83.

most of the increase in private-label securitizations consisted of nonprime securitizations.<sup>21</sup>

Academic studies have found that the securitization of subprime mortgage loans increased the quantity of originated subprime mortgages, which caused housing prices to increase further during the boom.<sup>22</sup>

13. As Professor Vandell also recognizes, one of the factors that contributed to the increase in the supply of credit (and the related increase in housing prices) was a relaxation of underwriting guidelines, and the related expansion of subprime lending.<sup>23</sup> Underwriting guidelines “specify the parameters or benchmarks that are generally to be followed by underwriters when issuing a mortgage loan and setting its terms.”<sup>24</sup> These parameters include required values for, among other things, credit scores, LTV ratios, and debt-to-income ratios, and may vary depending on occupancy type and other factors.<sup>25</sup> The supply of credit increases when

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21. Vandell Report, Exhibit 19. Between 2005 and 2006, Nomura securitized over \$17.2 billion in residential mortgage-backed securities. FAC ¶ 68. See also Taylor D. Nadauld & Shane M. Sherlund, “The impact of securitization on the expansion of subprime credit,” 107 Journal of Financial Economics (2013), 454-76, at 457 (providing annual data on the number of subprime residential mortgage-backed securitizations underwritten by Nomura and various other underwriters during the period from 1997-2007).

22. See Atif Mian & Amir Sufi, “The Consequences of Mortgage Credit Expansion: Evidence from the U.S. Mortgage Default Crisis,” Quarterly Journal of Economics (November 2009), 1449-1496 at 1449 (finding that subprime ZIP codes “experience[d] an unprecedented relative growth in mortgage credit” from 2002 to 2005 that was “closely correlated with the increase in securitization of subprime mortgages.”); Nadauld & Sherlund (2013), at 473 (finding that “increased securitization activity has a positive, economically meaningful impact on the extension of credit in the primary mortgage market.”); Andrey Pavlov & Susan Wachter, “Subprime Lending and Real Estate Prices,” 39 Real Estate Economics (2011), 1-17, at 1-2 & 9-15 (finding that “subprime loans ... induce higher price appreciation in up markets” by allowing for “more borrowing than otherwise would occur.”).

23. See Vandell Report, § VII.B.3 (identifying the expansion of underwriting guidelines as one of the “factors contributing to ownership expansion, price appreciation and mortgage and securitization growth”) & ¶ 56 (quoting a staff report to the House Committee on Oversight and Government Reform that concluded that lower lending standards “contributed not only to homeownership gains but also to rapid home-price appreciation as well.”),

24. Id., ¶ 73.

25. Id.

underwriting guidelines are relaxed (or, as Professor Vandell states, “expanded”), because more buyers qualify for loans.<sup>26</sup>

14. Professor Vandell fails to acknowledge, however, that approving loans that did not comply with stated underwriting guidelines, and not disclosing this practice to investors, further expanded the supply of credit by allowing additional borrowers to qualify for loans and facilitating the securitization of those loans. As explained above, FHFA alleges that Defendants falsely represented that the mortgage loans in the supporting loan groups for the At-Issue Certificates complied with stated underwriting guidelines that were intended to assess the creditworthiness of the borrowers, the ability of the borrowers to repay their mortgage loans, and the adequacy of the mortgaged properties as security for the loans. FHFA also alleges that these misrepresentations and omissions facilitated the sale of the At-Issue Certificates in the Securitizations.<sup>27</sup> Thus, the Alleged Underwriting Defects directly contributed to the housing price boom by supplying credit to borrowers who otherwise would not have qualified for mortgage loans.

15. This conclusion is supported by several recent academic studies. In particular, two recent academic studies have found that private-label securitization reduced the

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26. *Id.*, ¶ 79.

27. I understand that one of FHFA’s experts, Robert W. Hunter, has analyzed with respect to each Securitization a sample of approximately 100 mortgage loans from each of the supporting loan groups backing the certificates purchased by the GSEs and found that 78.28 percent of these mortgage loans were not originated in accordance with the requirements of the relevant originator’s underwriting guidelines, which supports FHFA’s allegation. Expert Report of Robert W. Hunter Regarding the Underwriting of Mortgage Loans Underlying the Nomura Securitizations, May 15, 2014 (“Hunter Report”), § II. Professor Vandell notes that underwriting guidelines often allow for exceptions when other compensating factors support the underwriting decision. Vandell Report, ¶¶ 107-8. However, I understand that Mr. Hunter did not make a defect finding if he concluded that there were one or more compensating factors sufficient to offset increased credit risk presented by any exceptions to the underwriting guidelines. Hunter Report, at 97.

incentives of lenders to carefully screen borrowers.<sup>28</sup> Two other recent studies have found evidence of significant misrepresentations concerning borrower quality in private-label securitizations.<sup>29</sup>

#### IV. THE ALLEGED UNDERWRITING DEFECTS CONTRIBUTED TO THE BURSTING OF THE HOUSE PRICE BUBBLE AND THE RESULTING HOUSING CRISIS

16. The house price bubble peaked in 2006, and subsequently burst. House prices nationally began to fall dramatically in 2007, as illustrated by Vandell Report, Exhibit 2. From April 2007 to May 2009, home prices in the U.S. fell by nearly a third.<sup>30</sup> Moreover, prices declined on a year-over-year basis for six consecutive years, from 2006 through 2011.<sup>31</sup> This long period of consecutive year-over-year price declines is particularly unusual, as housing prices between 1945 and 2005 had declined on a year-over-year basis only once (by one percent in 1990).<sup>32</sup>

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28. See Nadauld & Sherlund (2013), at 466-70 & 473 (providing empirical evidence that “the subprime credit expansion was associated with securitization activity that reduced lenders [sic] incentives to carefully screen borrowers, particularly with regards to soft information.”); Benjamin J. Keys, Amit Seru & Vikrant Vig, “Lender Screening and the Role of Securitization: Evidence from Prime and Subprime Mortgage Markets,” 25 The Review of Financial Studies (2012), 2071-2108, at 2075 (providing “evidence that lenders relax screening of low-documentation loans in the subprime market on dimensions that are easily manipulated because they are unreported to investors.”).

29. See John M. Griffin and Gonzalo Maturana, “Who Facilitated Misreporting in Securitized Loans?” April 12, 2014 (Journal of Finance, forthcoming). Available at SSRN: <http://ssrn.com/abstract=2256060> (finding frequent underreporting of second liens, owner occupancy misreporting, and appraisal overstatements among securitized non-agency loans during the period from 2002 to 2007); Tomasz Piskorski, Amit Seru and James Witkin, “Asset Quality Misrepresentation by Financial Intermediaries: Evidence from RMBS Market,” Columbia Business School Research Paper No. 13-7, February 12, 2013. Available at SSRN: <http://ssrn.com/abstract=2215422> (finding “a significant degree of misrepresentation of collateral quality across non-agency RMBS pools”).

30. See Vandell Report, ¶ 110 & Exhibit 31.

31. Id., ¶ 110 & Exhibit 32.

32. Id.

17. One of the principal reasons prices declined as much as they did when the bubble burst is that prices had increased during the bubble to levels that experience has shown to be unsustainable and unjustified by economic fundamentals. By mid-2006, the National Association of Realtors' Housing Affordability Index was lower than it had been at any time during the previous 16 years, indicating that many potential buyers could no longer afford homes.<sup>33</sup> Because the magnitude of the decline in housing prices when the bubble burst was related to the magnitude of the increase in housing prices that occurred during the housing boom, it necessarily follows that each of the factors that contributed to the unsustainable increase in housing prices during the housing boom (including the Alleged Underwriting Defects) also contributed to the decline in housing prices when the housing bubble burst.

18. The Alleged Underwriting Defects also contributed to the housing price bust via their impact on the home-building industry. When prices increased during the housing boom, the home-building industry responded by accelerating the construction of new homes.<sup>34</sup> As Vandell Report, Exhibit 35 shows, annualized housing starts generally increased from 2000 to 2005, and reached a peak of 1.8 million in January 2006. Ultimately, the supply of housing exceeded demand, which led to an increase in vacancy rates (as Vandell Report, Exhibit 36A shows), particularly in the sand states (as Vandell Report, Exhibit 36B shows).<sup>35</sup> These rising vacancy rates put downward pressure on home prices, by motivating sellers to cut prices.<sup>36</sup>

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33. See Vandell Report, ¶¶ 115-6 & Exhibit 33. The Housing Affordability Index measures the ability of a family earning the median income to purchase a median-priced home. A value of 100 means that a family with the median income has exactly enough income to qualify for a mortgage on a median-priced home, and a value above 100 signifies that a family earning the median income has more than enough income to qualify for a mortgage loan on a median-priced home, assuming a 20 percent down payment. See <http://www.realtor.org/topics/housing-affordability-index/methodology>

34. Vandell Report, ¶ 119.

35. *Id.*

36. *Id.*, ¶ 119 & note 164. See also U.S. Department of Housing and Urban Development Office of Policy Development and Research, "Report to Congress on the Root Causes of the

19. As Professor Vandell recognizes, falling home prices also triggered an increase in delinquencies and defaults.<sup>37</sup> When a home's price falls below the outstanding principal balance of the mortgage on the home, the owner is left with negative equity, which makes default an attractive option (particularly when loan provisions or state laws provide the lender with no recourse to the borrower's other assets).<sup>38</sup> By the end of 2009, approximately 24 percent of all mortgaged residential properties in the U.S. had negative equity, with substantially higher negative equity percentages in the sand states (48 percent in Florida, 70 percent in Nevada, 51 percent in Arizona, and 35 percent in California).<sup>39</sup> This situation occurred because subprime loans had relatively high LTV ratios and because home prices declined substantially.<sup>40</sup>

20. As noted above, FHFA alleges that many of the mortgage loans backing the At-Issue Certificates were not originated in accordance with the requirements of the applicable originator's underwriting guidelines, and that reported LTV ratios frequently were understated (because appraised values were overstated), thereby increasing the probability of default (as well as the severity of losses given default). Indeed, Dr. John A. Kilpatrick, one of FHFA's experts, opined that the appraisals were "systematically overvalued" and that the sample loans he reviewed had "substantially higher [LTV] ratios than represented" and that "each Securitization contained a substantial fraction of sample loans with [LTV] ratios over 100%,"

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Foreclosure Crisis," January 2010, at 18 ("House price declines were further exacerbated by an oversupply of new homes, particularly in markets where rapid house price growth had spurred significant housing demand by investors and borrowers that were aided by the ready availability of mortgage financing.").

37. Vandell Report, ¶¶ 128-44.

38. *Id.*, ¶ 128-9.

39. *Id.*, ¶ 128 & note 171 (citing "Underwater Mortgages on the Rise According to First American CoreLogic Q4 2009 Negative Equity Data," First America CoreLogic Press Release, February 23, 2010 ).

40. Vandell Report, ¶ 128. Any given decline in housing prices is more likely to result in negative equity when LTV ratios at origination are high.

while across the board, Nomura represented that no loans had [LTV] ratios over 100%.”<sup>41</sup>

Understated LTV ratios like these necessarily exacerbated the incidence and extent of negative equity that triggered the subsequent increases in delinquency and defaults (and losses associated with delinquencies and defaults).<sup>42</sup> This mechanism, therefore, is another way in which the Alleged Underwriting Defect contributed to the housing crisis.

21. Delinquencies soared when prices declined and the incidence and extent of negative equity increased. As Vandell Report, Exhibit 42 shows, between mid-2005 and late 2009, serious delinquencies on subprime mortgages increased from 5.7 percent to almost 30.6 percent, and serious delinquencies on prime mortgages increased approximately tenfold, from 0.7 percent to 7.0 percent.<sup>43</sup> The much higher delinquency rates led to sharp increases both in sales of real estate owned (“REO”) by lenders (as a result of foreclosures), and pre-foreclosure short sales, as Vandell Report, Exhibit 46A shows. Short sales and sales of REO by lenders exacerbated the housing crisis by increasing the supply of homes on the market, further depressing housing prices.<sup>44</sup> Falling house prices thus led to a vicious cycle in which defaults on

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41. Expert Report of John A. Kilpatrick, Ph.D. Concerning Accuracy of Appraisals, May 15, 2014, at 3, 63, 69, 74.

42. Academic studies have found that misrepresented non-agency securitized loans had significantly higher delinquency and default rates than other loans. See Griffin and Maturana (2014), at 2; Piskorski, Seru & Witkin (2013), at 55. See also Coleman, LaCour-Little & Vandell (2008), at 276 (explaining that “loose, or even fraudulent, underwriting” may lead to “higher ‘early’ defaults” and stating that “[s]uch a pattern has characterized the most recent cohorts of non-conforming mortgage products.”).

43. Vandell Report, ¶ 131. As would be expected, states that had larger house price declines experienced a higher frequency of defaults. Id., ¶ 144 & Exhibit 47. Pre-foreclosure rates also increased as equity declined and negative equity increased. See “Underwater Mortgages On the Rise According to First American CoreLogic Q4 2009 Negative Equity Data,” First American CoreLogic Press Release, February 23, 2010, Figure 4. A pre-foreclosure is a Notice of Default (“NOD”) or the first step in the public recordation of default. Id.

44. Vandell Report, ¶¶ 135-6 & Exhibit 46B (depicting the volume of REO sales and short sales). Also see Eric S. Belsky and Nela Richardson, “Understanding the Boom and Bust in Nonprime Mortgage Lending,” Joint Center for Housing Studies of Harvard University (September 2010), at 80 (“[F]oreclosures became an incessant and destructive force in the



mortgages and unsold homes led to further declines in house prices, which only further exacerbated the housing crisis. Consistent with FHFA's allegations, several published studies have found that the default rates of subprime loans originated during the housing boom were higher than would be expected given the reported characteristics of those loans.<sup>45</sup>

**V. THE RELATIONS BETWEEN THE HOUSING CRISIS, THE FINANCIAL CRISIS, AND GENERAL ECONOMIC CONDITIONS**

22. As a result of the financial crisis that began in the summer of 2007, financial institutions failed, liquidity froze, credit was curtailed, and the government intervened through various actions to stabilize the financial system. By December 2007, the United States

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(...continued)

housing market, dragging down house prices, boosting the inventory of homes for sale, and destroying home equity for millions of American households.”).

45. See Nadauld & Sherlund (2013), at 455, 466-67 (finding that default rates were higher in ZIP codes in which subprime mortgage credit expanded as a result of securitization activity); Uday Rajan, Amit Seru & Vikrant Vig, “The failure of models that predict failure: Distance, incentives and defaults” *Journal of Financial Economics* (2014) (finding that “a statistical default model estimated in a low securitization period ... underpredicts defaults [in a high securitization period] among borrowers for whom soft information is more valuable”); Yuliya Demyanyk & Otto Van Hemert, “Understanding the Subprime Mortgage Crisis,” 24 *The Review of Financial Studies* (2009), 1848-1880, at 1850 (finding that subprime “loan quality -- adjusted for observed characteristics and macroeconomic circumstances -- deteriorated monotonically between 2001 and 2007”) and 1852 (finding that “the effect of different loan-level characteristics as well as low house price appreciation was quantitatively too small to explain the poor performance of 2006 and 2007 vintage loans.”); Amiyatosh Purnanandam, “Originate-to-distribute Model and the Subprime Mortgage Crisis,” 24 *The Review of Financial Studies* (2009), 1881-1915, at 1881 (finding “that banks with high involvement in the [originate-to-distribute] market during the pre-crisis period originated excessively poor-quality mortgages” and that this “significantly contributed to the current subprime mortgage crisis”); Andrew Haughwout, Donghoon Lee, Joseph Tracy, & Wilbert van der Klaauw, “Real Estate Investors, the Leverage Cycle, and the Housing Market Crisis,” Federal Reserve Bank of New York Staff Report no. 514, September 2011, at 23 & 28, (finding that investors who misreported their intentions to occupy the property [on their mortgage loan applications] contributed to higher rates of default when housing prices declined).



had entered into a recession.<sup>46</sup> This recession lasted for one and a half years, until June 2009, making it the longest recession since the Great Depression.<sup>47</sup>

23. The consensus view, in hindsight, is that this financial crisis was triggered by the bursting of the house price bubble. For example, Dr. Daniel Nolle of the Office of the Comptroller of the Currency stated that, “[t]he consensus view, as reflected in the Financial Crisis Inquiry Commission Report (2011, p. xvi), is that ‘the collapse of the housing bubble [in the U.S.] ... was the spark’ that triggered the financial crisis, but the crisis quickly expanded across financial instruments, markets, networks, and national borders, exposing financial system vulnerabilities that had been building in many countries.”<sup>48</sup> A similar view is expressed by Yale’s Professor Shiller, who concludes that “[t]he housing bubble was a major cause, if not *the* cause, of the subprime crisis and of the broader economic crisis...” (emphasis in original).<sup>49</sup> The Vandell Report also recognizes that the bursting of the housing bubble affected the broader economy.<sup>50</sup>

24. The problems in the housing sector began to adversely affect certain housing-related investments in the spring of 2007. In particular, on May 4, 2007, UBS shut down its internal hedge fund, Dillon Read, after it suffered approximately \$125 million in subprime-related losses.<sup>51</sup> Later that month, Moody’s put 62 tranches of 21 U.S. subprime deals

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46. “Reflections on a Year of Crisis,” Federal Reserve Chairman Ben S. Bernanke Speech presented at Federal Reserve Bank of Kansas City’s Annual Economic Symposium, Jackson Hole, Wyoming, August 21, 2009.

47. Vandell Report, ¶ 111.

48. Daniel E. Nolle, “U.S. Domestic and International Financial Reform Policy: Are G20 Commitments and the Dodd-Frank Act in Sync?” Board of Governors of the Federal Reserve System International Finance Discussion Paper Number 1024 (2011), at 3 (footnote 5).

49. Robert J. Shiller, *The Subprime Solution: How Today’s Global Financial Crisis Happened, and What to Do about It*, (Princeton University Press, 2008), at 29.

50. Vandell Report, ¶¶ 109-12 & 171-4.

51. Markus K. Brunnermeier, “Deciphering the Liquidity and Credit Crunch 2007-2008,” 23 *Journal of Economic Perspectives* (2009), 77-100, at 83.

on review for a possible downgrade, which led to a deterioration of the prices of some mortgage-related securities.<sup>52</sup> On June 7, 2007, Bear Stearns Asset Management informed investors that it was suspending redemptions from its High-Grade Structured Credit Strategies Enhanced Leverage Fund, a leveraged fund that had invested in collateralized debt obligations (“CDOs”) backed by subprime loans and had lost 23 percent of its value during the first four months of 2007.<sup>53</sup> In June 2007, Standard & Poor’s and Moody’s Investor Services downgraded over 100 bonds backed by second-lien subprime mortgages.<sup>54</sup> On July 11, 2007, Standard & Poor’s placed 612 residential mortgage-backed securities backed by U.S. subprime collateral on CreditWatch with negative implications.<sup>55</sup> On July 31, 2007, Bear Stearns liquidated the High-Grade Structured Credit Strategies Enhanced Leverage Fund and another hedge fund that had invested in sub-prime related assets and had been unable to meet margin calls from many of their trading counterparts.<sup>56</sup> On the same date, American Home Mortgage Investment Corp. announced its inability to fund lending obligations; it subsequently declared bankruptcy on August 6.<sup>57</sup> Then, on August 9, 2007, French bank BNP Paribas announced that it had

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52. Id.

53. Matthew Goldstein, “Bear Stearns’ Subprime Bath,” Businessweek.com, June 12, 2007, <http://www.businessweek.com/stories/2007-06-12/bear-stearns-subprime-bathbusinessweek-business-news-stock-market-and-financial-advice>

54. “The Financial Crisis: A Timeline of Events and Policy Actions,” Federal Reserve Bank of St. Louis, <http://timeline.stlouisfed.org/index.cfm?p=timeline>

55. “S&PCORRECT: 612 U.S. Subprime RMBS Classes Put on Watch Neg; Methodology Revisions Announced,” Standard & Poor’s Global Credit Portal, RatingsDirect, July 11, 2007. The CreditWatch actions were taken because of poor collateral performance, S&P’s expectation of increasing losses on the underlying collateral pools, the consequent reduction of credit support, and changes in S&P’s methodology for rating new transactions. Id.

56. See Decision and Order Denying Recognition of Foreign Proceeding, In re: In re Bear Stearns High-Grade Structured Credit Strategies Master Fund, Ltd., Case No. 07-12383 (BRL), Bankr. S.D.N.Y., August 30, 2007 and In re Bear Stearns High-Grade Structured Credit Strategies Enhanced Leverage Master Fund, Ltd., Case No. 07-12384 (BRL), Bankr. S.D.N.Y. 2007, at 4. [http://www.nysb.uscourts.gov/sites/default/files/opinions/158969\\_24\\_opinion.pdf](http://www.nysb.uscourts.gov/sites/default/files/opinions/158969_24_opinion.pdf)

57. Brunnermeier (2009), at 84.

temporarily suspended redemptions for three of its investment funds that had invested in subprime residential mortgage-backed securities because the “complete evaporation of liquidity in certain market segments of the U.S. [securitization] market [had] made it impossible to ... value fairly the underlying US ABS assets” in the three funds.<sup>58</sup>

25. BNP Paribas’s announcement is considered by many to have been the trigger for the ensuing global financial crisis.<sup>59</sup> Following this event, money market participants became reluctant to lend to each other, and short-term rates increased on various instruments that had previously been considered to be safe.<sup>60</sup> In addition, many quantitative hedge funds suffered large losses, triggering margin calls and fire sales.<sup>61</sup> These developments created substantial uncertainty about the solvency and liquidity of counterparties, which affected the real economy when financial intermediaries began to hoard cash and stop lending.<sup>62</sup>

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58. “BNP Paribas Investment Partners temporary [sic] suspends the calculation of the Net Asset Value of the following funds : Parvest Dynamic ABS, BNP Paribas ABS EURIBOR and BNP Paribas ABS EONIA,” BNP Paribas press release, August 9, 2007, <http://www.bnpparibas.com/en/news/press-release/bnp-paribas-investment-partners-temporary-suspends-calculation-net-asset-value-fo>. The reduction in the liquidity of subprime RMBS during this period was caused by market participants’ concerns about the credit quality of the underlying loan collateral arising from increases in delinquency and default rates of subprime loans, which were related, at least in part, to deviations from stated underwriting guidelines for the reasons discussed in the § IV *supra*.

59. See Vandell Report, ¶ 172. See also Viral V. Acharya & T. Sabri Öncü, “A Proposal for the Resolution of Systemically Important Assets and Liabilities: The Case of the Repo Market,” 9 *International Journal of Central Banking*, (2013), 291-349, at 319. Brunnermeier (2009), at 84-85; Craig S. Hakkio & William R. Keeton, “Financial Stress: What Is It, How Can It Be Measured, and Why Does It Matter?” *Federal Reserve Bank of Kansas City Economic Review*, (Second Quarter 2009), 5-50 at 25; Claudio Borio, “The financial turmoil of 2007-?: a preliminary assessment and some policy considerations,” BIS Working Papers (No. 251), at 7.

60. See Brunnermeier (2009), at 84-5; Gary Gorton & Andrew Metrick, “Getting Up to Speed on the Financial Crisis: A One-Weekend-Reader’s Guide,” 50 *Journal of Economic Literature* (March 2012), 128-50, at 130.

61. See Brunnermeier (2009), at 85. Quantitative hedge funds use trading strategies based on statistical models, and their positions were highly correlated. *Id.*

62. See Gorton & Metrick (2012), at 146. For a more detailed description of these events, see Brunnermeier (2009), at 85-91, 95.

26. As the Vandell Report recognizes, the onset of the financial crisis is also reflected by the Kansas City Financial Stress Index (“KCFSI”).<sup>63</sup> Financial stress is an interruption in the normal functioning of financial markets that is associated with greater volatility in asset prices, reductions in asset prices, increased borrowing costs, a decreased willingness to hold risky assets, and a decreased willingness to hold illiquid assets.<sup>64</sup> A positive value of the index indicates that financial stress is above the long-run average, while a negative value signifies that financial stress is below the long-run average.<sup>65</sup> The KCFSI had negative values in the several years prior to July 2007, but began increasing in value thereafter.<sup>66</sup> The KCFSI reached its all-time high of 5.93 in October 2008.<sup>67</sup>

27. As housing prices declined, “losses and write-downs occurred across the entire financial sector.”<sup>68</sup> Financial institutions globally have attributed an estimated \$2.1 trillion of losses and write-downs to the mortgage market decline and subsequent turmoil in financial markets.<sup>69</sup> These losses eroded lending institutions’ capital, causing lending standards and margins to tighten, and fire sales of assets to occur.<sup>70</sup> As more banks tried to sell out of their

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63. Vandell Report, ¶ 173. The KCFSI is an overall index of financial stress constructed from 11 component variables by the Federal Reserve Bank of Kansas City and published for the period from 1990 to present. For a detailed description of how the KCFSI is constructed, see Hakkio & Keaton (2009), at 11-19. The 11 component variables in the KCFSI are: the three-month LIBOR/three-month Treasury bill (TED) spread; the two-year (fixed for floating rate) swap spread; the off-the-run/on-the-run 10-year benchmark Treasury spread; the Aaa/10-year Treasury spread; the Baa/Aaa spread; the high-yield bond/Baa spread; the consumer ABS/5-year Treasury spread; the correlation between the S&P 500 stock index and 2-year Treasury bond returns; the CBOE VIX; the idiosyncratic volatility of bank stock prices; and the cross-sectional dispersion of bank stock returns. Id., at 11-17.

64. See Hakkio & Keaton (2009), at 6-11.

65. Vandell Report, ¶ 173 & Exhibit 54.

66. Id.

67. Id.

68. Vandell Report, ¶ 110.

69. Id.

70. Brunnermeier (2009), at 78.

positions, asset prices plummeted further, and concerns about illiquidity turned into concerns about solvency, leading to runs on financial institutions and a cessation of interbank lending.<sup>71</sup> These events ultimately led to severe financial stress at several major financial institutions, including Bear Stearns, Lehman Brothers, Merrill Lynch, and AIG.<sup>72</sup>

28. The effects of the financial crisis on the real sector of the economy were devastating. As Professor Vandell states, real gross domestic product contracted by approximately 4.3 percent over the course of the recession and by 2.2 percent in the fourth quarter of 2008 alone.<sup>73</sup> Moreover, unemployment in the U.S. more than doubled from 4.4 percent in May 2007 to 10.0 percent in the fourth quarter of 2009 – a loss of more than 7 million jobs.<sup>74</sup>

29. The bursting of the housing price bubble also adversely affected the economy in other ways. In particular, household wealth declined as housing prices declined, leading to a decline in consumption expenditures and durable goods orders.<sup>75</sup> In addition, employment in the residential construction sector declined sharply when the housing bubble burst.<sup>76</sup>

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71. See Acharya & Öncü (2013), at 317-24; Douglas W. Diamond, & Raghuram G. Rajan, “The Credit Crisis: Conjectures about Causes and Remedies,” 99 American Economic Review: Papers & Proceedings (2009), 606-610, at 608-9; Brunnermeier (2009), at 78, 95-6.

72. See Brunnermeier (2009), at 88-90; Diamond & Rajan (2009), at 608-9.

73. Vandell Report, ¶ 111 & Exhibit 23.

74. Id., ¶ 111 & Exhibit 24.

75. See, e.g., Atif Mian, Kamalesh Rao, & Amir Sufi, “Household Balance Sheets, Consumption, and the Economic Slump,” The Quarterly Journal of Economics (2009), 1687-1726; Vandell Report, Exhibit 26.

76. Data from the Bureau of Labor Statistics shows that seasonally adjusted residential construction employment peaked in April 2006 and, by December 2008, had declined by almost 30 percent. “Employment, Hours, and Earnings from the Current Employment Statistics survey (National), Construction, Residential Building, All Employees-Thousands, Seasonally Adjusted- CES2023610001,” Bureau of Labor Statistics, United States Department of Labor, 1990-2014, <http://beta.bls.gov/dataViewer/view/timeseries/CES2023610001> (accessed November 4,

30. The financial crisis and recession also exacerbated the housing crisis in several ways. To begin with, the increase in unemployment reduced the demand for housing (exacerbating the housing price decline) and increased the incidence of delinquencies and defaults.<sup>77</sup> In addition, banks tightened their lending standards and the market for private-label mortgage-backed securities collapsed, reducing the supply of credit to borrowers, and thereby further reducing the demand for housing (further exacerbating the housing price decline).<sup>78</sup>

31. Thus, macroeconomic conditions like higher unemployment rates and the recession were not an unrelated, exogenous cause of the problems in the housing market. Rather, the Alleged Underwriting Defects contributed to the bursting of the house price bubble that triggered the financial crisis, which in turn led to the recession that exacerbated the problems in the housing market.

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(...continued)


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77. Vandell Report, ¶¶ 145-7.

78. Id., ¶¶ 124-7 & 148-53; Brunnermeier (2009), at 78, 91-94.

CONFIDENTIAL

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James R. Barth

November 10, 2014

# Exhibit A



## James R. Barth

Lowder Eminent Scholar in Finance  
303 Lowder Hall  
Auburn University  
Auburn, Alabama 36849-5245

Telephone: (334) 844-2469  
Fax: (334) 844-4960  
E-mail: [barthjr@auburn.edu](mailto:barthjr@auburn.edu)  
Homepage: <http://business.auburn.edu/~barthjr/>

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### EDUCATION

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Ph.D., 1972, Ohio State University  
M.A., 1967, University of New Mexico  
B.S., 1965, California State University at Sacramento

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### POSITIONS HELD

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Fellow of the Wharton Financial Institutions Center, University of Pennsylvania, 2012-present  
Lowder Eminent Scholar in Finance, Auburn University, 1989-present  
Senior Finance Fellow, Milken Institute, 1997-present  
(MI link: <http://www.milkeninstitute.org/about/about.taf?function=detail&Level1=ProStaff&Level2=Bio&ID=16&cat=Staff>)  
International Team Leader, Asian Development Bank Project on Reforming China's Banking Laws and Regulations, 2002-2004  
Visiting Scholar, World Bank, January 1998-March 1998  
Visiting Scholar, Office of the Comptroller of the Currency, U.S. Department of the Treasury, January 1996-March 1996  
Shaw Foundation Professor, Nanyang Technological University, Singapore, July 1997-August 1997  
Chief Economist, Office of Thrift Supervision, U.S. Department of the Treasury, August 1989-November 1989  
Chief Economist and Director of the Office of Policy and Economic Research, Federal Home Loan Bank Board, September 1987-July 1989  
Professor of Economics, The George Washington University, 1981-1987  
Visiting Scholar, Office of Policy and Economic Research, Federal Home Loan Bank Board, 1984-1985  
Visiting Scholar, Fiscal Analysis Division, U.S. Congressional Budget Office, 1983-1984  
Visiting Scholar, Research Department, Federal Reserve Bank of Atlanta, 1981-1983  
Associate Director, Economics Program, National Science Foundation, 1980-1981  
Associate Professor of Economics, The George Washington University, 1975-1981  
Principal Analyst, Fiscal Analysis Division, U.S. Congressional Budget Office, 1975-1976  
Assistant Professor of Economics, The George Washington University, 1972-1975

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### AWARDS, HONORS, AND GRANTS

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Auburn University, College of Business, Best All-Around Faculty Award, 2013.

Invited Participant, U.S. Speaker and Specialist Program, U.S. Department of State and U.S. Embassy in Portugal, Speaking Engagements in Portugal, May 2011, (Cancelled)

Maughmer Freedom Philosophy Lecture, Washington State University, Pullman, WA, April 11, 2011

Invited Participant, U.S. Speaker and Specialist Program, U.S. Department of State and U.S. Embassy in Cairo, Speaking Engagements in Egypt, May 2010

Auburn University, College of Business, Outstanding Elective Faculty Award, 2010

Invited Participant, U.S. Speaker and Specialist Program, U.S. Department of State and U.S. Embassy in Moscow, Speaking Engagements in Russia, May 2009

Auburn University, College of Business Distinctive Faculty Achievement Award, 2009

MBA Teacher of the Year, Auburn University, 2009

Invited Participant, U.S. Speaker and Specialist Program, U.S. Department of State and U.S. Embassy in New Delhi, Speaking Engagements in India, December 2008

Invited Participant, U.S. Speaker and Specialist Program, U.S. Department of State and U.S. Embassy in Beijing, Speaking Engagements in China, June 2006

Auburn University, College of Business Distinguished Faculty Achievement Award, 2006

MBA Teacher of the Year, Auburn University, 2003

J. Anderson Davis Lecture, Academy of Economics and Finance, 29th Annual Meeting, Pensacola, Florida, February 13-16, 2002

Omicron Delta Kappa Society, The National Leadership Honor Society, May, 1991

Research Award, College of Business, Auburn University, sponsored by Kraft Foods, 1991

Best Paper Award, Financial Institutions and Markets, Eastern Finance Association, 1990

Garn Institute of Finance Grant, University of Utah, "Moral Hazard and the S&L Crisis of the 1980s," (with Carl D. Hudson), 1990

Office of Thrift Supervision Executive Incentive Award, 1989

Federal Home Loan Bank Board Special Act Award, 1989

Senior Executive Service Award for Exemplary Service, 1988

Mid America Institute for Public Policy Research Grant, University of Michigan, "Understanding Thrift Failure Costs and the Regulator's Closure Rule," 1987-1988, declined

U.S. Chamber of Commerce Grant, "The Impact of Government Spending on Economic Activity," (with Michael D. Bradley), 1987

U.S. Small Business Administration Grant, "Employee Characteristics and Firm Size," (with Sheldon Haber and Joseph Cordes), 1985-1987

Federal Home Loan Bank Board Grant, "An Analysis of Risk to Thrift Institutions and to the FSLIC," 1985-1986

Distinguished Paper Award, Southwestern Finance Association, 1985

National Science Foundation Grant, "The Effects of Regulations on Consumer Credit Markets," (with Anthony Yezer and Joseph Cordes), 1978-1980

George Washington University Research Council Grant, 1971-1972, 1972-1973, 1973-1974, 1982-1983

Research Fellow, Ohio State University, 1971-1972

Federal Reserve Bank of Cleveland Dissertation Fellow, 1970-1971

Omicron Delta Epsilon (International Honorary in Economics)

Alpha Iota Delta (National Honorary in Decision Sciences)

Sigma Xi (North American Research Society)

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## PROFESSIONAL AFFILIATIONS

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American Economic Association

American Finance Association

American Real Estate and Urban Economics Association

Financial Management Association  
 National Association of Business Economists  
 Southeastern Finance Association  
 Western Economic Association

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## PROFESSIONAL ACTIVITIES

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Interviewed by the Financial Crisis Inquiry Commission, 2010  
 Interviewed by the Congressional Oversight Panel, 2010

### ***PROFESSIONAL ASSOCIATION POSITIONS:***

Member, Board of Governors, National Economists Club, January 1999-January 2002  
 Member, Advisory Council, Financial Services Research Program, Purdue University and subsequently George Washington University, 1990-2012.

### ***REFEREED MANUSCRIPTS FOR:***

American Economic Review	Journal of Financial Economics
Applied Economics	Journal of Financial Intermediation
Canadian Journal of Economics	Journal of Financial Services Research
Economica	Journal of Futures Markets
Economic Inquiry	Journal of International Business Studies
Economic Letters	Journal of International Finance
Emerging Markets Finance and Trade	Journal of International Money and Finance
European Journal of Political Economy	Journal of Macroeconomics
Financial Review	Journal of Money, Credit and Banking
International Review of Financial Analysis	Journal of Political Economy
Journal of the American Statistical Association	Journal of Political History
Journal of Banking and Finance	Journal of Real Estate Finance and Economics
Journal of Business Finance and Accounting	Journal of Transactions on Internet Research
Journal of Common Market Studies	Journal of Urban Affairs
Journal of Development Economics	Quarterly Review of Economics and Finance
Journal of Contemporary Policy Issues	Quarterly Review of Economics and Business
Journal of Comparative Economics	Regulation and Governance
Journal of Economics and Business	Review of Economics and Statistics
Journal of Economics and Finance	Review of Pacific Basin Financial Markets and Policies
Journal of Finance	Review of Quantitative Finance and Accounting
Journal of Financial Management	Southern Economic Journal
Journal of Empirical Finance	Swiss Journal of Economics

### ***EDITORIAL ACTIVITIES:***

Editorial Board: *Journal of Financial Risk Management*, 2012-present  
 Editorial Board: *Cross-Straight Finance Journal*, 2012-present  
 Editorial Board: *The Mexican Journal of Economics and Finance*, 2011-present  
 Guest Editor: Special Issue on China after the Global Financial Crisis, *Economics Research International*, 2011  
 Co-Editor: *Journal of Financial Economic Policy*, 2009-present  
 Overseas Associate Editor: *The Chinese Banker*, 2005-present

Series Co-Editor: *The Milken Institute Series on Financial Innovation and Economic Growth*, 2001-present

Associate Editor: *Review of Pacific Basin Financial Markets and Policies*, 1996-present

Editorial Board, *International Encyclopedia of Business & Management*, 2001

Associate Editor: *Financial Services Review*, 1996-2000

Editorial Board: *Journal of Financial Services Research*, 1988-1999

Associate Editor: *Federal Home Loan Bank Board Journal*, 1987-1989

Editorial Advisory Board: *Journal of Economics and Business*, 1980-1985

#### **REVIEW GRANT AND PUBLISHING PROPOSALS:**

Luxembourg National Research Fund

Israel Science Foundation

National Science Foundation

Various publishing companies of economic and finance textbooks and monographs

#### **PRESENTED PAPERS, CHAIRED SESSIONS, AND SERVED AS DISCUSSANT AT:**

All China Economic International Conference

American Economic Association Meetings

American Finance Association Meetings

American Statistical Association Meetings

American Real Estate and Urban Economics Association Meetings

American Institute of Decision Sciences Meetings

Asia-Pacific Economic Association Annual Conference

Atlantic Economic Society Conference

Eastern Economic Association Meetings

Eastern Finance Association Meetings

Econometric Society Meetings

Financial Management Association Meetings

Meetings of the American Institute of Decision Sciences

Midwest Economic Association Meetings

Southern Finance Association Meetings

Southern Regional Science Association Meetings

Southern Economic Association Meetings

Western Economic Association Meetings

#### **INVITED SPEAKER/PANELIST AT CONFERENCES/LUNCHEONS SPONSORED BY:**

Alabama Bankers Association

Alabama League of Savings Institutions

American Bankers Association

American Association for the Advancement of Science

American Enterprise Institute

Asian Development Bank

Asia-Pacific Economic Cooperation

Bank for International Settlements

Bank van de Nederlandse Antillen

Brookings Institution

Cato Institute

China Banking Regulatory Commission

Congressional Budget Office

Euromoney

Federal Deposit Insurance Corporation

Federal Home Loan Bank of Atlanta

Federal Home Loan Bank of New York

Federal Home Loan Bank of San Francisco

Federal Home Loan Bank of Seattle

Federal Reserve Bank of Atlanta

Federal Reserve Bank of Boston

Jerome Levy Economics Institute of Bard College

Lincoln Institute for Research and Education

Los Angeles Chapter, National Association for Business Economics

Louisiana League of Savings Institutions

Maryland League of Savings Institutions

Merrill Lynch

Milken Institute

National Association of Business Economists

National Association of Federal Credit Unions

National Association of Home Builders

National Conference of State Legislatures

National Economists Club

National Planning Association

National Society of Real Estate Finance

National Tax Symposium

New England League of Savings Institutions

Office of the Comptroller of the Currency

Organization for Economic Co-operation and Development

Peoples Bank of China

Rockefeller Foundation Bellagio Conference and Study Center

Salomon Brothers Center for the Study of Financial Institutions

Federal Reserve Bank of Cleveland  
 Federal Reserve Bank of Chicago  
 Federal Reserve Bank of Kansas City  
 Federal Reserve Bank of Philadelphia  
 Federal Reserve Bank of St. Louis  
 Financial Stability Institute  
 Hong Kong Institute for Monetary Research  
 Hong Kong Securities and Futures Commission  
 Household International  
 Institute for Supervisory Education  
 Inter-American Defense College  
 International Monetary Fund

Savings and Community Bankers of America  
 Smith Barney Investment Banking Company  
 Society of Government Economists  
 Southwest Institute for Finance  
 The Garn Institute  
 The North American Forum  
 U.S. Department of Agriculture  
 U.S. League of Savings Institutions  
 Urban Institute  
 Washington Women Economists  
 Women's World Banking  
 World Bank

***TESTIFIED BEFORE:***

Committee on Financial Services, U.S. House of Representative, on the Impact of the Volcker Rule on Markets, Businesses, Investors, and Job Creation, Part II, December 13, 2012.  
 Committee on Banking, Finance, and Urban Affairs, U.S. House of Representatives, on Credit Unions, October 6, 1994  
 Committee on Banking, Housing, and Urban Affairs, U.S. Senate, on Consolidation of the Bank Regulatory Agencies, March 4, 1994  
 Committee on Banking, Housing, and Urban Affairs, U.S. Senate, on Condition and Outlook of the Savings and Loan Industry, June 17, 1992  
 Committee on Banking, Finance, and Urban Affairs, Task Force on the Resolution Trust Corporation on the Structure of the Savings and Loan Bailout, U.S. House of Representatives, July 1991  
 Committee on Banking, Finance, and Urban Affairs, Subcommittee on Financial Institutions Supervision, Regulation, and Insurance, U.S. House of Representatives, on Deposit Insurance Reform and Restructuring of the Banking Industry, April 1991  
 Committee on Banking, Housing, and Urban Affairs, U.S. Senate, on Deposit Insurance Reform, March 1991  
 Committee on Banking, Finance, and Urban Affairs, Subcommittee on Financial Institutions, Supervision, Regulation, and Insurance, U.S. House of Representatives, on the condition of the U.S. Banking Industry and the Bank Insurance Fund, December 1990  
 Committee on Banking, Housing, and Urban Affairs, U.S. Senate, on Deposit Insurance Reform, May 1990  
 Committee on Banking, Finance, and Urban Affairs, U.S. House of Representatives, on Fraud and Insider Abuse, April 1990  
 Federal Trade Commission

***APPEARED ON:***

ABC Good Morning America  
 ABC Nightline  
 CCTV (Biz China, Biz Asia America, Dialogue, News Hour)  
 Cable News Network (Newswatch, Money Line, Prime News, Business Morning)  
 CNBC  
 CNNFN  
 CBS Evening News  
 CSPAN  
 Bloomberg  
 Financial News Network (America's Business)  
 Fox News  
 Money Radio  
 National Public Radio  
 NBC Evening News

PBS (McNeil/Lehrer Newshour, Nightly Business Report, Frontline)  
 Other local television and radio programs  
 Sina.com (Biggest web portal in China)  
 Yahoo! Finance  
 TYT Network

***LISTED IN:***

Who's Who in U.S. Executives  
 Who's Who in America  
 Who's Who International  
 Who's Who in Economics: A Biographical Dictionary of Major Economists 1700 to 1995

***QUOTED IN A NUMBER OF NEWSPAPER AND FINANCIAL PUBLICATIONS, INCLUDING:***

American Banker	National Thrift News
Atlanta Constitution	New York Times
Barrons	Newsweek
Birmingham News	Real Clear Markets
Business Week	San Diego Union Tribune
Changing Times	San Francisco Chronicle
Chicago Tribune	Savings Institutions Magazine
Economist	Time
Financial World	The Deal
Forbes	U.S. News and World Report
Investment Professional	USA Today
Los Angeles Business Journal	Wall Street Journal
Los Angeles Times	Washington Monthly
Money Magazine	Washington Post
National Journal	Washington Times
National Post	

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**VIDEOS/AUDIOS/OP-EDS**

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Interview James R. Barth  
 Russia Direct- January 16, 2014  
 Is Russia too protective of its economy?  
<http://www.russia-direct.org/content/russia-too-protective-its-economy>

Post-crisis regulation and supervision of the biggest banks by the biggest countries: Consensus on principles, variation in practices  
 Cayman Financial Review- January 15, 2014  
[http://www.compasscayman.com/cfr/2014/01/15/Post-crisis-regulation-and-supervision-of-the-biggest-banks-by-the-biggest-countries-/  
 /](http://www.compasscayman.com/cfr/2014/01/15/Post-crisis-regulation-and-supervision-of-the-biggest-banks-by-the-biggest-countries-/)

Boston's Lockdown Economy  
 Huffpost Live- April 22, 2013  
<http://live.huffingtonpost.com/r/segment/whats-the-economic/51717c4c02a76055bf000068>

Money Radio  
 Money Radio- June 7, 2012  
<http://www.moneyradio1510.com/Program-Schedule/318/Financial%20Review%20with%20Sinclair%20Noe>

JPMorgan's challenges and lessons to be learnt  
 Dialogue, CCTV News- May 28, 2012  
<http://english.cntv.cn/program/dialogue/20120528/104041.shtml>

We Need Regulators Who Do Their Jobs  
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- "A Time Series Analysis of the Relationship between the Capital Stock and Federal Debt," (with Frank Russek and George Wang), *Journal of Money, Credit, and Banking*, November 1986.
- "Failure Costs of Government-Regulated Financial Firms: The Case of Thrift Institutions," (with R. Dan Brumbaugh, Jr. and Daniel Sauerhaft), Research Paper No. 123, Federal Home Loan Bank Board, October 1986.
- "Benefits and Costs of Legal Restrictions on Personal Loan Markets," (with Joseph Cordes and Anthony Yezer), *Journal of Law and Economics*, October 1986.
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- "Benefits and Costs of Securities Regulation: A Conceptual Framework," (with Joseph Cordes), for the Experimental Technology Incentives Program, U.S. Department of Commerce, 1978.
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- "The 'Moneyness' of Financial Assets," (with Arthur Kraft and John Kraft), *Applied Economics*, March 1977.
- "Regulation A, Rule 144 and Rule 146," (with Joseph Cordes), for the Experimental Technology Incentives Program, U.S. Department of Commerce, 1977.
- "The Economic Impact of The Federal Trade Commission Proposals for Credit Contract Regulations on the Cost and Availability of Consumer Credit," (with Anthony Yezer), Bureau of Social Science Research, Washington, D.C., March 1977.
- "The Causal Relationship Between the Money Supply and Business Activity: A Critical Appraisal," (with James Bennett), *Quarterly Review of Economics and Business*, Winter 1976.
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- "An Evaluation of Studies of Important Problems for Government and Small Technology Based Firms," (with James Bennett and J. Eric Fredland), for the Experimental Technology Incentives Program, U.S. Department of Commerce, September 1976.
- "An Evaluation and Critique of the A.D. Little Analysis of the Economic Impact of Toxic Pollutant Effluent Standards for Manufacturers and Formulators of Aldrin/Dieldrin, DDT, Endrin and Toxaphene," (with James Bennett), for Hercules, Inc., July 1976.
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- "An Econometric Analysis of a Federal Revenue-Sharing Allocation Formula," *Public Finance Quarterly*, January 1976.
- "Transactions Cost and the Demand for Cash," (with Philip Wiest), *Metroeconomica*, December 1975.
- "The Regional Impact of Open-Market Operations on Member Bank Reserves," (with Marvin Phaup and David Pierce), *Journal of Economics and Business*, Fall 1975.
- "Cost-Push vs. Demand-Pull Inflation: Some Empirical Evidence," (with James Bennett), *Journal of Money, Credit, and Banking*, August 1975.
- "Deposit Variability and Commercial Bank Cash Holdings," (with James Bennett), *Review of Economics and Statistics*, May 1975.
- "A Portfolio Theoretic Approach to Industrial Diversification and Regional Employment," (with John Kraft and Philip Wiest), *Journal of Regional Science*, April 1975.
- "Seasonal Variation in Interest Rates," (with James Bennett), *Review of Economics and Statistics*, February 1975.
- "Optimal Reserve Management Reconsidered," (with James Bennett), *The Southern Economic Journal*, April 1975.
- "An Economic Analysis of Price Increases in the U.S. Coal Industry," (with James Bennett) for the American Public Power Association, 1974. Reprinted in *Greater Coal Utilization*, Joint Hearings before the Committee on Interior and Insular Affairs and Public Works, U.S. Senate, Government Printing Office, 1975. Also reprinted in *Oversight-Federal Coal Leasing Program*, Hearings before the Subcommittee on Minerals, Materials, and Fuels, U.S. Senate, Government Printing Office, 1976 and excerpted in *Congressional Record*, U.S. Congress, February 1975.
- "An Evaluation and Critique of 'Review of the Economic Analysis of the Electroplating Industry,'" (with James Bennett and R. Dan Brumbaugh, Jr.), for the National Association of Metal Finishers, 1975.
- "Cyclical Behavior, Seasonality, and Trend in Economic Time Series," (with James Bennett), *Nebraska Journal of Economics and Business*, Winter 1974.
- "An Evaluation and Critique of 'Economic Analysis of Effluent Guidelines -- The Electroplating Industry,'" (with James Bennett and R. Dan Brumbaugh, Jr.), for the National Association of Metal Finishers, 1974.
- "Astrology and Modern Science Revisited," (with James Bennett), *Leonardo*, 1974.
- "A Note on the Relationship Between FEBS and GNP," (with James Bennett), *Economic Inquiry*, September 1974.
- "The Role of Money in the Canadian Economy: An Empirical Test," (with James Bennett), *The Canadian Journal of Economics*, May 1974.
- "A Spectral Analysis of Money and Business Cycles," (with James Bennett), *Quarterly Review of Economics and Business*, Spring 1974.
- "Economic Determinants of the Regional Allocation of Federal R&D Expenditures," (with James Bennett), *Land Economics*, February 1974.
- "Astronomics: A New Approach to Economics?" (with James Bennett), *Journal of Political Economy*, November/December 1973.
- "Economies of Scale and Cash Balances of Commercial Banks," (with Arthur Kraft), *Proceedings of the American Institute for Decision Sciences*, November 1973.
- "A New Approach to Measuring the Interest Elasticity of the Demand for Money," (with Arthur Kraft and John Kraft), *Proceedings of the Business and Economic Statistics Section of the American Statistical Association*, 1973.
- "Predicting Human Behavior, A Spirited Approach," (with James Bennett), *Journal of Irreproducible Results*, June 1973.
- "Excess Reserves and Bank Size," (with Marvin Phaup), *Economic Review*, Federal Reserve Bank of Cleveland, January 1972.
- "Money, Income and Causality: Some Further Results," (with James Bennett), *Western Economic Journal*, December 1972.

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### SPECIAL JOURNAL ISSUES

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Special Issue on Marketing Financial Services, *Psychology and Marketing*, December 1995.

Special Issue on Public Policy and Real Estate Finance, *Journal of Real Estate Finance and Economics*, co-editor with James D. Schilling, June 1992.

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### BOOKS REVIEWS

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- Book review of *High Rollers: Inside The Savings and Loan Debacle*, by Martin Lowy, Praeger, in *Journal of Economic Literature*, March 1994.
- Book review of *The S&L Insurance Mess: How Did It Happen?* by Edward J. Kane, Urban Institute Press, in *Journal of Economic Literature*, September 1990 and in *Office of Thrift Supervision Journal*, September 1989.
- Book review of *American Jobs and the Changing Industrial Base*, edited by Eileen Collins and Lucretia Dewey Tanner, Ballinger Publishing Company, in *Southern Economic Journal*, (with Sheldon Haber), July 1986.
- Book review of *Essays in Contemporary Economic Problems, 1985: The Economy in Deficit*, edited by Philip Cagan and Eduardo Samensatto, American Enterprise Institute, in *Journal of Economic Literature*, March 1986.
- Book review of *The Congressional Budget Process after Five Years*, edited by Rudolph G. Penner, American Enterprise Institute, in *Journal of Money, Credit, and Banking*, May 1984.

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### RECENT PRESENTATIONS

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2014

- “Issues in Mortgage and Housing Finance”, Enhancing Prudential Standards in Financial Regulations, Federal Reserve Bank of Philadelphia & Wharton Financial Institutions Center, Philadelphia, Pennsylvania, April 8-9, 2014.
- “A Retrospective on Bank Regulation and Supervision around the World”, Annual CEMP-CIEPS FORUM-Capital Flows and Financial Liberalization, Arlington, Virginia, March 13, 2014.
- Panelist for “Post-Crisis Financial Reform: Is it Working and Should More be Done?”, The Foley Institute with the WSU College of Business, Pullman, Washington, March 11, 2014.
- “Proposal: Study of Alabama Banks’ Contribution to the State’s Overall Health,” Bank Directors’ College, Auburn University, Auburn, Alabama, February 20-21, 2014.
- “Human Capital and Outreach Improve Lives in Alabama and Beyond,” Outreach Scholarship Symposium, Auburn, Alabama, February 10, 2014.
- “Bank Regulation and Supervision in 180 Countries from 1999 to 2011,” (with Gerard Caprio, Jr. and Ross Levine), Allied Social Science Associations Meetings, Philadelphia, Pennsylvania, January 3-5, 2014.

2013

- “Global Economy and Its Effect on Local Revenue,” 2013 AMROA Winter Workshop/Conference, Auburn, Alabama, December 5, 2013.
- “Presentation to the Alabama Public Service Commission,” Montgomery, Alabama, October 9, 2013.
- “Global Economic Growth,” iGrow Global Commerce Summit, Marina Del Rey, California, September 11, 2013.
- Panelist for “Possible Alternative Solutions To The Failure of Current Credit Rating System And Importance of Having Credit Rating Agencies In Asia, Where Capital Flows Into Economy”, Universal Credit Rating Group & Forum on International Credit Rating System Reform Program, Hong Kong, June 24, 2013.
- “The Guardians of Finance: Making Regulators Work for Us,” (with Gerard Caprio, Jr. and Ross Levine), World Bank, May 21, 2013
- “Global Financial Regulation,” Milken Institute Global Conference 2013, Beverly Hills, California, April 29, 2013.
- “Workforce Development: Bridging Gaps to Increase Investments in Alabama,” Center for Governmental Services, Montgomery, Alabama, March 25, 2013.

“Bank Regulation and Supervision in 180 Countries from 1999 to 2011,” (with Nan (Annie) Zhang), College of Business Finance Seminar, Auburn University, Auburn, Alabama, February 1, 2013.

“Breaking (Banks) Up is Hard to Do: New Perspective on Too Big To Fail,” CFA and CPA Annual Meeting, Chattanooga, Tennessee, January 10, 2013.

“Just How Big Is the Too Big to Fail Problem,” The 2013 Annual Conference of the American Economic Association/Allied Social Science Associations, San Diego, California, January 4-6, 2013.

## 2012

“Breaking (Banks) Up is Hard to Do: New Perspective on Too Big To Fail,” Hong Kong Institute for Monetary Research, Hong Kong, December 6, 2012.

“Breaking (Banks) Up is Hard to Do: New Perspective on Too Big To Fail,” Securities and Futures Commission, Hong Kong, December 6, 2012.

“Financial Services Regulations: Prudential or Anti-competitive?” OECD Experts Meeting on Financial Services, Paris, France, November 30, 2012.

“Too-Big-To-Fail: A Little Perspective on a Large Problem,” with Apanard (Penny) Prabha, Fifteen Annual International Banking Conference, Federal Reserve Bank of Chicago, Chicago, Illinois, November 2012.

“Restructuring the U.S. Housing Market,” with Franklin Allen, and Glenn Yago, Restructuring Financial Infrastructure to Speed Recovery, Brookings-Nomura-Wharton Conference on Financial Markets, Washington, D.C., October 26, 2012.

“The Guardians of Finance: Making Regulators Work for Us,” Andrew Young School of Policy Studies, Georgia State University, Atlanta, Georgia, October 19, 2012.

“Just How Big is The Too Big To Fail Problem?” Claremont Institute for Policy Studies, Claremont, California, September 25, 2012.

“Global Challenges,” 2012 Economic Analysts’ Offsite, Washington, D.C., September 6, 2012.

“The Guardians of Finance: Making Regulators Work for Us,” Los Angeles Chapter of National Association for Business Economics, Los Angeles, California, May 9, 2012.

“The Guardians of Finance: Making Regulators Work for Us,” Washington State University, Pullman, Washington, April 11, 2012.

“The Guardians of Finance: Making Regulators Work for Us,” San Diego State University, San Diego, California, April 6, 2012.

“The Guardians of Finance: Making Regulators Work for Us,” Claremont McKenna College, Claremont, California, March 9, 2012.

“The Guardians of Finance: Making Regulators Work for Us,” Milken Institute, Santa Monica, California, March 8, 2012.

## 2011

“Bank and Sovereign Risk: A More Complete Picture for Successful Regulatory Reforms,” with Apanard (Penny) Angkinand Prabha, Association for Global Business Annual Conference, Newport Beach, California, November 18, 2011.

“The Guardians of Finance: Making Regulators Work for Us,” Shanghai University of Finance and Economics, Shanghai, China September 19, 2011.

“The Guardians of Finance: Making Regulators Work for Us,” School of Economics and Management, Tsinghua University, Beijing, China, September 15, 2011.

“The Guardians of Finance: Making Regulators Work for Us,” China Banking Regulatory Commission, Beijing, China, September 14, 2011.

“The Guardians of Finance: Making Regulators Work for Us,” Graduate University of the Chinese Academy of Science, Beijing, China, September 14, 2011.

“Regulatory Reform: What Works and What Doesn’t,” Peoples Bank of China, Beijing, China, September 13, 2011.

“What’s Next?” Global LAVA Group Meeting, Los Angeles, California, September 2, 2011.



- "The Financial System in Mexico: Challenges and Opportunities," First Congress of Financial Research, Mexico City, Mexico, August 25, 2011.
- "China's Evolving Financial System and Increasing Globalization," with Tong (Cindy) Li, 86th Western Economic Association International Annual Conference, San Diego, California, July 12, 2011.
- "The Guardians of Finance: Why Regulators Lead Us from Crisis to Crisis, and What to Do About It," Federal Reserve Bank of Kansas City, Kansas City, Missouri, June 28, 2011.
- "Industrial Loan Companies Supporting America's Financial System," Alta Club, Salt Lake City, Utah, June 2, 2011.
- "Financial Challenges and Opportunities," Societe Academique, Birmingham, Alabama, February 22, 2011.

## 2010

- "The Guardians of Finance," Office of the Comptroller of the Currency, Washington, D.C., December 15, 2010.
- "Cross-Border Bank Mergers and Acquisitions: What Pulls and Pushes Banks Together?" 2010 Financial Management Association Annual Meeting, New York, NY, October 20-23, 2010.
- "Small and Medium Enterprise Financing in Transition Economics," 70th International Atlantic Economic Conference, Charleston, South Carolina, October 10-13, 2010.
- "Banks and Reform," Bank Directors' College, Auburn, Alabama, September 30-October 1, 2010.
- "CENTRA Technology," Southern California Roundtable, Santa Monica, California, September 22, 2010.
- "Role of Industrial Banks in America Study: Preview," Utah Association of Financial Services National Association of Industrial Bankers Annual Convention, Midway, Utah, August 20, 2010.
- "Do Bank Regulation, Supervision and Monitoring Enhance or Impede Bank Efficiency?" Federal Reserve Bank of Kansas City, Kansas City, Missouri, July 13, 2010.
- "Perspective on Capital Markets," Speaker, 2010 Leadership in the Private Capital Markets, Argyle Executive Forum, Los Angeles, California, June 10, 2010.
- "Global Financial Crisis," Strategic Speaker Initiative, U.S. State Department, Cairo and Alexandria, Egypt, May 8-15, 2010.
- "Cross-border Bank Mergers and Acquisitions: What Pulls and Pushes Banks Together?" 2010 American Institute of Higher Education 4th International Conference, Williamsburg, Virginia, March 17-19, 2010.

## 2009

- "The Rise and Fall of the U.S. Mortgage and Credit Markets," Federal Deposit Insurance Corporation Washington, D.C. December 15, 2009.
- "Forecasting Asia, the West, and the World: Investment Takeaways for the Future," 2009 Asian Pension Fund Roundtable, Mitigating Uncertainty: Institutional Investors & Risk Management, Bangkok, Thailand, November 4-6, 2009.
- "The Rise and Fall of the U.S. Mortgage and Credit Markets," Economic Opportunities in the Presence of a World Financial Crisis, Tegucigalpa, Honduras, October 23-24, 2009.
- "The U.S. Financial Crisis: What Happened and What's Next?" Tuesday Lunch Talk Series, School of Politics and Economics, Claremont Graduate University, October 6, 2009.
- "The View from Washington: The Credit Crunch, Recovery, and Moving the Economy Forward," DVC Program in Mumbai, India sponsored by the U.S. State Department, September 30, 2009.
- "The U.S. Mortgage and Credit Markets Crisis: What Happened and What's Next?" U.S. Department of Agriculture, Washington, D.C., September 22, 2009.
- "The Current Global Economic Downturn and its Effect on Developing Economies," DVC Program in Dhaka, Bangladesh, sponsored by the U.S. State Department, August 19, 2009.
- "The Mortgage Market Meltdown and Global Financial Crisis: What Happened, What Went Wrong and How Did It Spread?" RBS Wealth Management, Beverly Hills, California, July 7, 2009.

- “The Mortgage Market Meltdown and Global Financial Crisis: What Happened, What Went Wrong and How Did It Spread?” 84<sup>th</sup> Annual Conference, Western Economic Association International, Vancouver, Canada, June 29-July 3, 2009.
- “Are Growing Stock Market Interdependencies Among Advanced Countries A Source of Financial Spillover?” The Fifth Asia-Pacific Economic Association, Santa Cruz, California, June 27-28, 2009.
- “Financial and Credit Crisis: Wall Street in a Tailspin,” CFA Society of Los Angeles, Inc., Los Angeles, California, June 16, 2009.
- “Safety and Soundness of Financial Institutions,” 2009 International Housing Finance Program, Housing Finance in a Changing Global Environment, Wharton School, University of Pennsylvania, Philadelphia, Pennsylvania, June 10, 2009.
- “China’s Financial Stability,” Intelligence Community Roundtable, Washington, D.C., June 9, 2009.
- “Financial and Economic Crisis: Regulatory Issues,” 2009 Financial and Economic Crisis Bank Leadership Symposium, Bankers Association Point, Clear, Alabama, June 6, 2009.
- “Roosevelt and Obama: Confronting Economic Crises,” Gorbachev Foundation, Moscow, Russia, May 29, 2009.
- “Roosevelt and Obama: Confronting Economic Crises,” Moscow Carnegie Center, Moscow, Russia, May 28, 2009.
- “Roosevelt and Obama: Confronting Economic Crises,” Interview at Russia Today TV, Spotlight Program, Moscow, Russia, May 28, 2009.
- “Roosevelt and Obama: Confronting Economic Crises,” Council for National Competitiveness, Moscow, Russia, May 27, 2009.
- “Roosevelt and Obama: Confronting Economic Crises,” American Center, Moscow, Russia, May 27, 2009.
- “Roosevelt and Obama: Confronting Economic Crises,” South Urals State University, Moscow, Russia, May 26, 2009.
- “Roosevelt and Obama: Confronting Economic Crises,” Perm State University, Perm, Russia, May 25, 2009.
- “Roosevelt and Obama: Confronting Economic Crises,” The American Corner, Perm, Russia, May 25, 2009.
- “The Rise and Fall of the U.S. Mortgage and Credit Markets: What Happened and What’s Next?” Lingnan University, Hong Kong, China, May 15, 2009.
- “Bank Regulation, Supervision and Monitoring and Bank Efficiency,” co-authored paper presentation and “Towards a New Framework for Financial Stability,” panel discussion (panelist), The Global Financial Turmoil and the Evolving Financial Interdependence in Asia, conference held by Hong Kong Institute for Monetary Research, Lingnan University, and Columbia University, in Hong Kong, May 11-12, 2009.
- “The Rise and Fall of the U.S. Mortgage and Credit Markets,” Society of Women Accountants and Chartered Financial Analysts, Chattanooga, Tennessee, May 5-6, 2009.
- “The Rise and Fall of the U.S. Mortgage and Credit Markets: What Happened and What’s Next?” College of Business Advisory Council, Auburn, Alabama, March 27, 2009.
- “The Rise and Fall of the U.S. Mortgage and Credit Markets,” College of Business, University of Nevada, Las Vegas, Nevada, March 19, 2009.
- “The Rise and Fall of the U.S. Mortgage and Credit Markets,” Andrew Young School of Public Policy Studies, Georgia State University, Atlanta, Georgia, April 3, 2009.
- “Leverage and Risk of Financial Institutions,” Conference on Procyclicality in the Financial System, De Nederlandsche Bank, Amsterdam, February 9-10, 2009.
- “The U.S. Housing and Financial Meltdown: What Happened and What Has Been the Response?” Federal Reserve Bank of Cleveland, Cleveland, Ohio, January 12, 2009.
- “On the Global Financial Crisis,” Video presentation and discussion arranged by U.S. Embassy in Amman, Jordan, January 21, 2009.
- “Bank Regulatory Reform,” Workshop, Rhodes Center for International Economics, Brown University, Providence, Rhode Island, January 23, 2009.

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- “Understanding the Global Financial Crisis: Implications for the U.S. and India,” Panel discussion, American Center, New Delhi, India, December 12, 2008.



- "The Piece-Meal Fixes of the Federal Reserve, U.S. Congress and White House, and Government Regulatory Agencies to the Growing and Evolving Crisis," Indian Institute of Foreign Trade, New Delhi, India, December 11, 2008.
- "The Origin of the Current Economic Crisis, Including the Switch from an Originate-to-Hold Housing Finance Model to an Originate-to-Securitize Model," Delhi School of Economics, New Delhi, India, December 11, 2008.
- "Global Financial Meltdown: Causes and Lessons for the Future," Indian Council for Research on International Economic Relations, New Delhi, India, December 10, 2008.
- "Housing and Financial Meltdown," Department of Finance, Indian Institute of Management, Kolkata, India, December 8, 2008.
- "Housing and Financial Meltdown," Reserve Bank of India, Kolkata, India, December 5, 2008.
- "Global Economic Crises: U.S. Response," Bengal Chamber of Commerce and Industries, Kolkata, India, December 4, 2008.
- "The Global Economic Crisis: Challenges and Responses," Southern India Chamber of Commerce and Industry Chennai, India, December 3, 2008.
- "Current Global Economic Crises," Madras School of Economics, Chennai, India, December 3, 2008.
- "Global Economic Crises: Challenges and Responses," Lecture, Institute of Financial Management and Research Chennai, India, December, 2008.
- "Global Economic Crisis: U.S. Response," Lecture, Indo-American Chamber of Commerce, American Corner, Bharatiya Vidya Bawan, Bangalore, India, December 2008.
- "Global Economic Crisis: U.S. Response," Lecture, Indian Institute of Management, Bangalore, India, December 2008.
- "Global Economic Crisis," Roundtable discussion, Fiscal Policy Research Institute, Bangalore, India, December 2008.
- "Issues in Global Bank Mergers and Acquisitions," Southern Finance Association Annual Meetings, Casa Marina Resort and Beach Club, Key West, Florida, November 19 - 22, 2008.
- "The U.S. Housing and Financial Crisis," State Department "Ask America" Web chat, November 12, 2008.
- "WTO Commitments vs. Reported Practices on Foreign Bank Entry and Regulation: A Cross-Country Analysis," FMA Annual Meeting, Dallas, Texas, October 10, 2008.
- "Demystifying the Mortgage Meltdown: What It Means for Main Street, Wall Street and the U.S. Financial System," Milken Institute, Santa Monica, California, October 2, 2008.
- "China's Investment Practices, Patterns, and Strategies," "China 2015: China's Outward Direct Investment, sponsored by Office of Asian Pacific and Latin American Analysis, Washington, D.C., July 17, 2008.
- "U.S. Subprime Mortgage Market Meltdown," 14th Dubrovnik Economic Conference, The Croatian National Bank, Dubrovnik, Croatia, June 25 - 28, 2008.
- "Competition in the Financial Sector: Challenges for Regulation," Shanghai University of Finance and Economics, Shanghai, China, June 12, 2008.
- "Subprime Mortgage Market Meltdown," Lingnan University, Hong Kong, China, June 10, 2008.
- "WTO Commitments vs. Reported Practices on Foreign Bank Entry and Regulation: A Cross-Country Analysis," Chung-Hua Institution for Economic Research, Taipei, Taiwan, June 06, 2008.
- "Competition in the Financial Sector: Challenges for Regulation," National Taiwan University, Taipei, Taiwan, June 5, 2008.
- "China's Economic Competitiveness and Implications for the United States," National University of Kaohsiung, Kaohsiung, Taiwan, June 3, 2008.
- "Subprime Mortgage Market Meltdown," National Taiwan University Taipei, Taiwan, June 2, 2008.
- "The Future of the Mortgage Market: Where Do We Go From Here?" Global Conference, Milken Institute, The Beverly Hilton, Los Angeles, California, April 28, 2008.
- "Economic Security and Global Financial Markets: Balancing Competition and Regulation," U.S. Treasury Department-Director of National Intelligence-Private Sector Workshop on the National Security Dimensions of the International Banking and Financial Sector, Washington, D.C., March 20, 2008.
- "Competition in the Financial Sector: Challenges for Regulation," G-20 Workshop on Competition in the Financial Sector, Bali, Indonesia, February 15-17, 2008.

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- “Economic Impacts of Global Terrorism: From Munich to Bali,” Conference on Emerging Research Frontiers in International Business Conflict, Security and Political Risk: International Business in a Challenging Environment, Miami, Florida, November 28-December 1, 2007.
- “Implications and Risks of China’s New Investment Policy,” Conference on China’s Evolving Global Investment Policy: Outlook and Risks, sponsored by the Mitre Corporation, Washington, D.C., November 14, 2007.
- “China’s Economic Competitiveness and Implications for the U.S. Economy,” Global Security Seminar Dinner, University of California at Los Angeles, Los Angeles, California, November 7, 2007.
- “New Measures of Bank Regulation and Supervision,” Workshop on Measuring Bank Regulation and Supervision, World Bank, Washington, D.C., October 26, 2007.
- “New Measures of Financial Regulation,” Conference on Political Economic Indicators and International Economic Analysis, Claremont Graduate University, Claremont, California, October 13, 2007.
- “Hedge Funds: A Global Perspective on Strategies and Risks,” Conference and Joint Meeting of Shadow Financial Regulatory Committees, Copenhagen, Denmark, September 7-10, 2007.
- “Corruption in Bank Lending to Firms: Do Competition and Information Sharing Matter?” University of Hong Kong, Hong Kong, China, August 22, 2007.
- “Competition, Information, and Corruption in Bank Lending,” The 2007 Summer Workshop on Industrial Organization and Management Strategy, School of Business, Shanghai University of Finance and Economics, Shanghai, China, June 1, 2007.
- “Bank Regulation Is Changing: But for Better or Worse?” University of Hong Kong and Jinan University Hong Kong and Guangzhou, China, June, 2007.
- Panelist for “Beyond Big: Measuring China’s Markets,” and Moderator for “Global Integration of Capital Markets: Challenges and Opportunities,” Milken Institute Global Conference 2007, Los Angeles, California, April 23-25, 2007.
- “China’s Changing Financial System: Can It Catch up with, or Even Drive Growth?” (with Gerard Caprio), China-A Two Way Street, A Forum on China’s Economic Growth and Opportunities for Indiana, Indiana State University, Indianapolis, Indiana, January 24-25, 2007.
- “Inverted Yield Curves and Financial Institutions: Are We Headed for a Repeat of the 1980’s Crisis?” Countrywide Financial Calabasas, California, January 3, 2007.

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- “A Theoretical and Empirical Assessment of Bank Risk-Shifting Behavior,” (with Mark Bertus, Jiang Hai and Triphon Phumivasana), All China Economics International Conference, Hong Kong, December 18-20, 2006.
- “Global Banking and Financial Markets” and “Global Perspectives on Banking,” Young Leaders Banking Program, Riverside, California, December 10-16, 2006.
- “Regulatory and Market Forces in Controlling Bank Risk-taking: A Cross-Country Analysis,” (with Apanard Angkinand, Triphon Phumivasana, and Glas Wihlborg), 2006 AIB Southeast Asia Regional Conference, Bangkok, Thailand, December 7-9, 2006.
- “Reassessing Current Approaches to Banking Supervision,” New Approaches to Banking Supervision, A Tanaka Business School Conference, Imperial College, London University and U.K. Financial Services Administration, London, November 3, 2006.
- “Reassessing the Rationale and Practice of Bank Regulation and Supervision,” Seminar on Current Developments in Monetary and Financial Law, International Monetary Fund, Washington, D.C., October 23-27, 2006.
- “External Governance and Bank Performance: Across-Country Analysis,” (with Mark Bertus, Valentina Hartarska, Jiang Hai and Triphon Phumivasana), Financial Management Association Annual Meeting, Salt Lake City, Utah, October 11-14, 2006.
- “What Do We Know about the Performance and Risk of Hedge Funds?” (with Triphon Phumivasana, Tong Li and Glenn Yago), International Financial Instability Cross –Border Banking & National Regulation, Chicago, Illinois, October 5-6, 2006.

- "The Design and Governance of Bank Supervision," (with Gerard Caprio, Jr. and Ross Levine), 2006 Riksbank Conference on the Governance of Central Banks, Stockholm, Sweden, August 31- September 1 2006.
- "Foreign Banking: Do Countries' WTO Commitments Match Actual Practices?" (with Juan Marchetti and Dan Nolle), Asia-Pacific Economic Association Annual Conference, Seattle, Washington, July 29-30, 2006.
- "Barriers to Entrepreneurship in Emerging Domestic Markets: Analysis and Recommendations," (with Glenn Yago and Betsy Zeidman), Federal Reserve Bank of Kansas City and Kaufman Foundation, Kansas City, Missouri, April 2006.
- "A Framework for Assessing China's Vulnerability to Financial Disruption," (with Glenn Yago), Assessing China's Financial Vulnerability Workshop, A Conference Sponsored by the Office of Asia Pacific and Latin American Analysis, March 10, 2006.
- "Economic Impacts of Global Terrorism: From Munich to Bali," (with Tong Li, Donald McCarthy, Triphon Phumiwasana and Glenn Yago), American Economics Association Annual Meeting, Boston, Massachusetts, January 8, 2006.

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- "A Cross-Country Analysis of Bank Performance: The Role of External Governance," (with Daniel Gropper, Valentina Hartarska, Daniel E. Nolle, and Triphon Phumiwasana), The 18<sup>th</sup> Australasian Finance and Banking Conference, Sydney, Australia, December 14, 15 and 16, 2005.
- "Rethinking Bank Regulation: What Works Best and Why Do Countries Choose to Regulate the Way They Do?" Economics Department, University of Nevada, Las Vegas, Nevada, December 16, 2005.
- "Rethinking Bank Regulation: Till Angels Govern," (with Gerard Caprio, Jr., and Ross Levine), Milken Institute, Santa Monica, California, December 8, 2005.
- "Harmonization of Regulation and Supervision among EU Countries," (with Tong Li, and Ed Phumiwasana), Claremont McKenna College, Claremont, California, November 18, 2005.
- "Stumbling Blocks to Entrepreneurship in Low- and Moderate-Income Communities," (with Glenn Yago and Betsy Zeidman), Conference on Entrepreneurship in Low- and Moderate-Income Communities, Federal Reserve Bank of Kansas City and The Ewing Marion Kauffman Foundation, Kansas City, Missouri, November 3, 2005.
- "Rethinking Bank Regulation," (with Gerard Caprio, Jr., Ross Levine), Bank of England and Bank of Slovenia Conference. Ljubljana, Slovenia, October 28, 2005.
- "Rethinking Bank Regulation," Ministry of Finance, Beijing, China, May 25- 26 and 27, 2005.
- "Rethinking the Way Countries Regulate Banks," Central University of Finance and Economics, Beijing, China, May 26, 2005.
- "Investing in China's Under-performing Assets: Opportunity or Peril?" moderator, Milken Institute Global Conference, Los Angeles, California, April 18-20, 2005.
- "Rethinking Bank Regulation and Supervision: Till Angels Govern," with Gerard Caprio, Jr., and Ross Levine, Financial Economics Seminar Series, World Bank, Washington, D.C., January 24, 2005.
- "Rethinking Bank Regulation and Supervision: Till Angels Govern," (with Gerard Caprio, and Ross Levine), Financial Economics Seminar Series, World Bank, Washington, D.C., January 24, 2005.
- "The Savings and Loan Crisis: Lessons from a Regulatory Failure," (with Glenn Yago), Milken Institute, Santa Monica, California, January 6, 2005.

## 2004

- "Financial Systems and Economic Development Opportunities and Challenges for China," Tsinghua University, Beijing, China, December 7, 2004.
- "Financial Systems and Economic Development Opportunities and Challenges for China," Renmin University of China, Beijing, China, December 6, 2004.
- "A New Global Database: How Are Banks Regulated and Supervised Around the World?" Claremont Economics Seminar, Claremont McKenna College, Claremont, California, November 10, 2004.
- "External Governance and Bank Performance: A Cross-Country Analysis," (with Daniel E. Nolle, Valentina Hartarska, and Ed Phumiwasana), Dolibois Seminar Series, Miami University, Oxford, Ohio, October 25, 2004.

“Asian Financial Cooperation for Economic Prosperity,” the 12th Annual Conference on Pacific Basin Finance, Economics, Accounting, and Business, Bangkok, Thailand, August 10-11, 2004.

“Financial Supervision and Crisis Management: U.S. Experience and Lessons for Emerging Market Economies,” (with Daniel E. Nolle, Lawrence Goldberg, and Glenn Yago), 2004EWC/KDI Conference, East-West Center, Honolulu, Hawaii, July 29-30, 2004.

“External Governance and Bank Performance: A Cross-Country Analysis,” (with Daniel E. Nolle, Valentina Hartarska, and Ed Phumiwasana), 79<sup>th</sup> Annual Conference of the Western Economic Association International, Vancouver, Canada, June 29-July 3, 2004.

## 2003

“Global Trends in Bank Regulatory and Supervisory Environment,” Woori Bank Conference on Reforms and Innovations in Banking, Seoul, Korea, November 28, 2003.

“Comments on the Development of Asian Bond Markets,” First Annual Asian Bond Market Forum, Hong Kong, China, November 11 -12, 2003.

“Bank Safety and Soundness and the Structure of Bank Supervision: A Cross-Country Analysis,” (with Luis G. Dopico, Daniel E. Nolle, James E. Wilcox) Financial Management Association Annual Meeting, Denver, Colorado, October 8-11, 2003, <http://207.36.165.114/Denver/>.

“Reliving the S&L Crisis: Moral Hazard or Organized Crime,” Conference on Corporate Governance and Control Fraud, University of Texas, Austin, TX, April 28 - 29, 2003.

“Comparative Banking Supervision and Regulation,” (with Daniel E. Nolle) and “Corporate Governance,” (with Ed Phumiwasana), Claremont Conference on Global Political Economy Data, Claremont McKenna College, Claremont, California, April 11, 2003 .

“A Cross-Country Analysis of the Bank Supervisory Framework and Bank Performance,” ( with Daniel E. Nolle, Ed Phumiwasana, Glenn Yago), Midwest Finance Association 52nd Annual Meeting, Adam's Mark Hotel, St. Louis, Missouri, March 27-29, 2003, <http://www.mfa2003.org/>.

“On Improving Bank Regulation and Supervision in China,” Workshop on China's Financial Sector Legal Framework, Beijing, China, March 24 - 28, 2003.

“Bank Regulation and Supervision: Some Issues and International Evidence,” Office of the Superintendent of Financial Institutions (OSFI), Ottawa, Canada, February 24, 2003.

“Is Consolidated Financial Regulation Appropriate for the United States?” Panel on “Financial Services Agencies in the UK and Japan,” American Enterprise Institute Conference, Washington, D.C., February 21, 2003. [http://www.aei.org/events/eventID.237,filter./event\\_detail.asp](http://www.aei.org/events/eventID.237,filter./event_detail.asp).

“Bank Regulation and Supervision: Some Issues and International Evidence,” Federal Reserve Bank of Atlanta, Atlanta, Georgia, February 10, 2003.

“A Cross-Country Analysis of the Bank Supervisory Framework and Bank Performance,” (with Daniel E. Nolle, Ed Phumiwasana, Glenn Yago), Federal Deposit Insurance Corporation, Washington, D.C., January 15, 2003.

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“A Cross-Country Analysis of the Bank Supervisory Framework and Bank Performance,” (with Daniel E. Nolle, Ed Phumiwasana, and Glenn Yago), American Bankers Association, Washington, D.C., December 11, 2002.

“Bank Regulation and Supervision: What Works Best?” (with Gerald Caprio, Jr. and Ross Levine), Macroeconomic Stability, Financial Markets and Economic Development, Bank of Mexico, Mexico, November 12-13, 2002.

“Bank Regulation and Supervision: What Works Best?” (with Gerald Caprio, Jr. and Ross Levine), Financial Market Development in Latin America, Center for Research on Economic Development and Policy Reform, Stanford University, California, November 8 - 9, 2002.

“A Panel Discussion on the New Plan for Africa’s Development,” The New Partnership for Africa’s Development (NEPAD), Milken Institute, Santa Monica, California, October 24, 2002.

- "The Changing Structure of Latin American Banking Markets," The European Union and the Americas Conference on Spanish Investment in Latin America, Miami European Center and the FIU Latin American and Caribbean Center, Coral Gables, FL, October 18-19, 2002.
- "The Great Savings and Loan Problems," (with Susanne Trimboth), Penn Square Bank, 20 Years Later: An Examination into the Causes, Effects, Responses, and Continuing Consequences of the Banking and Deposit Insurance Crisis of the 1980s, Sponsored by Oklahoma City University School of Law, The Oklahoma Bar Review and The Conference on Consumer Finance Law, Oklahoma City, Oklahoma, October 3-4, 2002.
- "Do Differences in the Structure, Scope and Independence of Bank Supervision in Countries Around the World Matter?" Lecture at Colorado State University, Ft. Collins, Colorado, September 20, 2002.
- "Comments on Subprime Lending," Credit Research Center's Subprime Lending Symposium, Georgetown University, Credit Research Center, Washington, D.C., September 17-18, 2002.
- "U.S. Economic Outlook and Demographic Information," Minneapolis, MN, August 15-16, 2002.
- Participated in "Emerging Market Countries: Is Globalization Leading to Polarization," Economic Security Group, Central Intelligence Agency, Washington, D.C., July 23-24, 2002.
- "A Cross-Country Analysis of the Bank Supervisory Framework and Bank Performance," (with Ed Phumiwasana, Daniel Nolle and Glenn Yago), Western Economic Association's 77th Annual Conference, Westin Seattle, Seattle, Washington, July 02, 2002.
- "Size, Structure and Regulation of the Financial Sector," International Symposium on the Transformation and Diversification of the Financial Sector in South Africa, Sponsored by the National Economic Development and Labour Council Johannesburg, South Africa, April 05 - 06, 2002.
- "An International Comparison and Assessment of Bank Regulation and Supervision," Department of Economics, University of Southern California, Los Angeles, California, July 9, 2002.
- "Bank Regulation, Capital Markets and Economic Growth," The Division of Banking & Finance Centre for Research in Financial Services, Nanyang Technological University, Singapore, May 21, 2002.
- "Bank Regulation and Supervision: What Works Best?" (with Gerald Caprio, Jr., and Ross Levine), Basel II: An Economic Assessment, Bank for International Settlements, May 17-18, 2002.
- "International Best Practices in Regulation based on Case Studies of Relevant Experiences from Developed and Emerging Economies," (with Susanne Trimboth), International Conference on Regulation of Financial Intermediaries in Emerging Markets, Mumbai, India, March 21, 2002.
- "Finance and Growth," J. Anderson Davis Lecture, The Academy of Economics and Finance 29th Annual Meeting, Pensacola, Florida, February 15, 2002.
- 2001
- "Bank Regulation and Supervision: What Works Best," (with Gerard Caprio and Ross Levine), Claremont Graduate University, Economics Department, Claremont, California, December 5, 2001.
- "Bank Regulation and Supervision: What Works Best," (with Gerard Caprio and Ross Levine), University of Maryland, College Park, Maryland, December 10, 2001.
- "Bank Regulation and Supervision: What Works Best," (with Gerard Caprio and Ross Levine), Risks of Financial Institutions, National Bureau of Economic Research, Inc., Cambridge, Massachusetts, November 30, 2001.  
<http://www.nber.org/~confer/2001/risk01/program.html>.
- "Bank Safety and Soundness and the Structure of Bank Supervision: A Cross-Country Analysis," (with Luis G. Dopico, Daniel E. Nolle, and James A. Wilcox), FMA Annual Meeting, Toronto, Canada, November 20-22, 2001.
- "Bank Regulation and Supervision: What Works Best," (with Gerard Caprio and Ross Levine), The Future of American Banking: Historical, Theoretical, and Empirical Perspectives, Yale University, New Haven, Connecticut, November 9-10, 2001. <http://www.econ.yale.edu/econhist/banking/banking2.html>.
- "Do Bank Supervisory Structures Differ Across Countries? Does It Matter?" (with Gerard Caprio and Daniel Nolle), Financial Stability Institute, Bank for International Settlements, Regional Workshop for the Caribbean Banking Supervisors Group on Corporate Governance, E-banking and Supervisory Structures, Curaçao, Netherlands Antilles, October 30 – November 2, 2001.



- “Banking Regulation, Financial Structure, and Economic Performance: Cross Country Evidence,” (with Luis G. Dopico, Daniel E. Nolle, and James A. Wilcox), 2001 FMA Annual Meeting, Toronto, Canada, October 17-20, 2001. <http://www.fma.org/Toronto/TorontoProgram.htm>.
- “Bank Regulation and Supervision: What Works Best,” (with Gerard Caprio and Ross Levine), University of Michigan, Ann Arbor, MI, October 12, 2001.
- “Bank Regulation and Supervision: What Works Best,” (with Gerard Caprio and Ross Levine), Stanford University, Stanford, California, October 3, 2001.
- “Bank Regulation and Supervision: What Works Best,” (with Gerard Caprio and Ross Levine), 12th Conference Financial Economics and Accounting Conference, Rutgers, The State University of New Jersey, New Brunswick, New Jersey, September 20-21, 2001.
- “Finance and Growth: An Overview,” (with Ross Levine), University of Nevada, Las Vegas, Nevada, August 31, 2001.
- “A Nested Real Option Model for Multi-stage Capital Investment Decisions,” (with Hemantha Herath), Asia Pacific Finance Association (APFA) Annual Conference, Bangkok, Thailand, July 22-25, 2001.
- “The Regulation and Supervision of Banks Around the World: A New Database,” (with Gerard Caprio and Ross Levine), Western Economic Association Meetings, July 7-8, 2001. <http://fac.cgu.edu/~zakp/WEA01.htm>.
- “An International Comparison of the Structure and Implementation of Bank Supervision,” (with Luis G. Dopico, Daniel E. Nolle and James A. Wilcox), The Future of Financial Regulation in Taiwan, Taipei, Taiwan, July 6-7, 2001.
- “Bank Regulation and Supervision: What Works Best,” (with Gerard Caprio and Ross Levine), Hong Kong Monetary Authority, Hong Kong, China, June 29, 2001.
- “Finance and Growth: An Overview,” (with Ross Levine), APEC Economic Outlook Symposium, Hong Kong, China, June 28-29, 2001.
- “Bank Regulation and Supervision: What Works Best,” (with Gerard Caprio and Ross Levine), Reserve Bank of Australia, Australia, June 1, 2001.
- “Bank Regulation and Supervision: What Works Best,” (with Gerard Caprio and Ross Levine), International Monetary Fund, Washington, D.C., May 17, 2001.
- “Regulation and Supervision of Banks Around the World: A New Database,” (with Gerard Caprio and Ross Levine), Carlson School of Management, University of Minnesota, Minneapolis, Minnesota, May 9, 2001.
- “Bank Regulation and Supervision: What Works Best,” (with Gerard Caprio and Ross Levine), Annual Bank Conference on Development Economics, World Bank, Washington, D.C., May 1, 2001. [http://www.worldbank.org/wbi/B-SPAN/abcde/abcde\\_agenda.htm](http://www.worldbank.org/wbi/B-SPAN/abcde/abcde_agenda.htm).
- “Regulation and Supervision of Banks Around the World: A New Database,” (with Gerard Caprio and Ross Levine), Harvard University, Cambridge, Massachusetts, March 8, 2001.
- “Regulation and Supervision of Banks Around the World: A New Database,” (with Gerard Caprio and Ross Levine), Inter-American Development Bank, Washington, D.C., February, 23 2001.
- “Regulation and Supervision of Banks Around the World: A New Database,” (with Gerard Caprio and Ross Levine), Integrating Emerging Market Countries Into Global Financial System, Brookings-Wharton Papers on Financial Services, 4th Annual Conference, Washington, D.C., January 12, 2001.
- “Regulation and Supervision of Banks Around the World: A New Database,” (with Gerard Caprio and Ross Levine), Banco Central de Chile, Santiago, Chile, January 10, 2001.
- “Banking Regulation, Financial Structure, and Economic Performance: Cross Country Evidence,” (with Daniel E. Nolle and James A. Wilcox), North American Economic and Finance Association Meetings, New Orleans, LA, January 7, 2001.

2000

- “Global Financial Consolidation and Integration: Opportunities and Challenges,” 19th Annual International Monetary and Trade Conference, Federal Reserve Bank of Philadelphia, Philadelphia, Pennsylvania, November 13, 2000.
- “Global Financial Consolidation and Integration: Opportunities and Challenges,” National Association for Business Economics, Los Angeles Chapter, Los Angeles, California, October 10, 2000.

“Gramm-Leach-Bliley Act of 1999,” Atlanta Economics Club, Atlanta, Georgia, April 18, 2000.



# **Exhibit B**

**Testimony of James R. Barth within Last Four Years****2014:**

*Federal Housing Finance Agency, as Conservator for The Federal National Mortgage Association and The Federal Home Loan Mortgage Corporation v. HSBC North America Holdings et al.*. United States District Court, Southern District of New York. Deposed on August 11, 2014. (Report submitted in June 2014.)

**2013:**

*Allonhill, LLC v. Aurora Bank (Aurora Commercial Corporation)* Denver District Court. Testified on December 16, 2013. (Report submitted in fall of 2013.)

*Alabama Gas Corporation (ALAGASCO) proceedings* before the Alabama Public Service Commission. Testified on October 9, 2013.

**2012:**

*Capital One*. Deposed on May 8, 2012. (Report submitted in April 2012.)

*MBIA Insurance Corporation, Plaintiff, v. Countrywide Home Loans, Inc., Countrywide Securities Corp., Countrywide Financial Corp., Countrywide Home Loans Servicing, LP and Bank of America Corp., Defendants.* Deposed on July 31, 2012. (Report submitted in June 2012.)

**2011:**

*In the Matter of: Franklin D. Raines, J. Timothy Howard, and Leanne G. Spencer, Respondents. United States of America Office of Federal Housing Enterprise Oversight.* Deposed on March 16, 2012. (Report submitted in December 2011.)

# Exhibit C

## Exhibit C

### Materials Relied Upon

#### Academic Articles and Books

- Viral V. Acharya & T. Sabri Öncü, “A Proposal for the Resolution of Systemically Important Assets and Liabilities: The Case of the Repo Market,” 9 International Journal of Central Banking, (2013), 291-349
- Martin Neil Baily, Robert E. Litan, & Matthew S. Johnson, “The Origins of the Financial Crisis,” 3 Fixing Finance Series, Brookings Institution (November 2008)
- Eric S. Belsky and Nela Richardson, “Understanding the Boom and Bust in Nonprime Mortgage Lending,” Joint Center for Housing Studies of Harvard University (September 2010)
- Claudio Borio, “The financial turmoil of 2007-?: a preliminary assessment and some policy considerations,” BIS Working Papers (No. 251)
- Jan K. Brueckner, Paul S. Calem, & Leonard I. Nakamura, “Subprime mortgages and the housing bubble,” 71 Journal of Urban Economics (2012), 230-243
- Markus K. Brunnermeier, “Deciphering the Liquidity and Credit Crunch 2007-2008,” 23 Journal of Economic Perspectives (2009), 77-100
- Karl E. Case & Robert J. Shiller, “Is There a Bubble in the Housing Market?,” 2 Brookings Papers on Economic Activity (2003), 299-362
- Major Coleman IV, Michael LaCour-Little, & Kerry D. Vandell, “Subprime Lending and the Housing Bubble: Tail Wags Dog?” 17 Journal of Housing Economics (2008), 272-290
- Yuliya Demyanyk & Otto Van Hemert, “Understanding the Subprime Mortgage Crisis,” 24 The Review of Financial Studies (2009)
- Douglas W. Diamond, & Raghuram G. Rajan, “The Credit Crisis: Conjectures about Causes and Remedies,” 99 American Economic Review: Papers & Proceedings (2009), 606-610
- Jane Dokko, Brian Doyle, Michael T. Kiley, Jinill Kim, Shane Sherlund, Jae Sim, & Skander Van den Heuvel. “Monetary Policy and the Housing Bubble,” Finance and Economics Discussion Series, Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board, (2009)
- Gary Gorton, Slapped by the Invisible Hand, The Panic of 2007, (Oxford University Press, 2010).
- Gary Gorton & Andrew Metrick, “Getting Up to Speed on the Financial Crisis: A One-Weekend-Reader’s Guide,” 50 Journal of Economic Literature (March 2012)
- John M. Griffin and Gonzalo Maturana, “Who Facilitated Misreporting in Securitized Loans?” April 2014. Available at SSRN: <http://ssrn.com/abstract=2256060>
- Craig S. Hakkio & William R. Keeton, “Financial Stress: What Is It, How Can It Be Measured, and Why Does It Matter?” Federal Reserve Bank of Kansas City Economic Review, (Second Quarter 2009), 5-50

Andrew Haughwout, Donghoon Lee, Joseph Tracy, & Wilbert van der Klaauw, "Real Estate Investors, the Leverage Cycle, and the Housing Market Crisis," Federal Reserve Bank of New York Staff Report no. 514, September 2011

Benjamin J. Keys, Amit Seru & Vikrant Vig, "Lender Screening and the Role of Securitization: Evidence from Prime and Subprime Mortgage Markets," 25 The Review of Financial Studies (2012), 2071-2108

Adam J. Levitin, & Susan M. Wachter, "Explaining the Housing Bubble," 100 The Georgetown Law Journal (2012), 1177-1258

Atif Mian, Kamalesh Rao, & Amir Sufi, "Household Balance Sheets, Consumption, and the Economic Slump," The Quarterly Journal of Economics (2013), 1687-1726.

Atif Mian & Amir Sufi, "The Consequences of Mortgage Credit Expansion: Evidence from the U.S. Mortgage Default Crisis," The Quarterly Journal of Economics (2009), 1449-1496

Taylor D. Nadauld & Shane M. Sherlund, "The impact of securitization on the expansion of subprime credit," 107 Journal of Financial Economics (2013), 454-476

Daniel E. Nolle, "U.S. Domestic and International Financial Reform Policy: Are G20 Commitments and the Dodd-Frank Act in Sync?" Board of Governors of the Federal Reserve System International Finance Discussion Paper Number 1024 (2011)

Andrey Pavlov & Susan Wachter, "Subprime Lending and Real Estate Prices," 39 Real Estate Economics (2011), 1-17

Tomasz Piskorski, Amit Seru and James Witkin, "Asset Quality Misrepresentation by Financial Intermediaries: Evidence from RMBS Market," Columbia Business School Research Paper No. 13-7, February 12, 2013. Available at SSRN: <http://ssrn.com/abstract=2215422>

Amiyatosh Purnanandam, "Originate-to-distribute Model and the Subprime Mortgage Crisis," 24 The Review of Financial Studies (2009)

Uday Rajan, Amit Seru & Vikrant Vig, "The failure of models that predict failure: Distance, incentives and defaults" Journal of Financial Economics (2014)

Robert J. Shiller, "The Subprime Solution: How Today's Global Financial Crisis Happened, and What to Do about It," (Princeton University Press, 2008)

Joseph E. Stiglitz, "Symposium on Bubbles," 4 Journal of Economic Perspectives (Spring 1990), 13-18

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### **Government Reports**

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### **Case Documents and Legal Filings**

Federal Housing Finance Agency, etc. v. Nomura Holding America Inc., et. al., Amended Complaint

Expert Report of Robert W. Hunter Regarding the Underwriting of Mortgage Loans Underlying the Nomura Securitizations, May 15, 2014

Expert Report of John A. Kilpatrick, Ph.D. Concerning Accuracy of Appraisals, May 15, 2014

Expert Report of Kerry D. Vandell, Ph.D., July 9, 2014

### **Other Legal Filings**

Decision and Order Denying Recognition of Foreign Proceeding, In re: In re Bear Stearns High-Grade Structured Credit Strategies Master Fund, Ltd., Case No. 07-12383 (BRL), Bankr. S.D.N.Y., August 30, 2007 and In re Bear Stearns High-Grade Structured Credit Strategies Enhanced Leverage Master Fund, Ltd., Case No. 07-12384 (BRL), Bankr. S.D.N.Y. 2007, at 4, [http://www.nysb.uscourts.gov/sites/default/files/opinions/158969\\_24\\_opinion.pdf](http://www.nysb.uscourts.gov/sites/default/files/opinions/158969_24_opinion.pdf)

### **Speeches and Public Statements**

“Reflections on a Year of Crisis.” Federal Reserve Chairman B. Bernanke Speech presented at Federal Reserve Bank of Kansas City’s Annual Economic Symposium, Jackson Hole, Wyoming, August 21, 2009.

Statement of John C. Dugan, Comptroller of the Currency, before the Financial Crisis Inquiry Commission, April 8, 2010

Alan Greenspan, “Question: Is there a New Economy?” Remarks by Chairman Alan Greenspan at the Haas Annual Business Faculty Research Dialogue, University of California, Berkeley, California, September 4, 1988

### **Websites and Other Data Sources**

“Employment, Hours, and Earnings from the Current Employment Statistics survey (National), Construction, Residential Building, All Employees-Thousands, Seasonally Adjusted- CES2023610001,” Bureau of Labor Statistics, United States Department of Labor, 1990-2014,  
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